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ABSTRACT

The study was undertaken to use data from the National Longitudinal study, in combination with other data resources, to improve the understanding of the effects of student financial aid in institutional and family decisionmaking. Three principle questions are addressed: (1) Do low income and minority students receive larger aid packages, and in what amounts and kind?; (2) How do institutions package financial aid offers to students, and what part does the net price of eudcational costs play?; and (3) What is the effect of financial aid on actual parental contributions? The empirical results suggest the nature and extent of student aid effects on several presumed national goals. Extensive data tables are included. (Author/MSE)

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STUDENT FINANCIAL AID:
INSTITUTIONAL PACKAGING AND FAMILY EXPENDITURE PATTERNS

National Longitudinal Study of
the High School Class of 1972

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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STUDENT FINANCIAL AID:
INSTITUTIONAL PACKAGING AND
FAMILY EXPENDITURE PATTERNS

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CHAPTER I

STUDENT FINANCIAL AID AND PUBLIC POLICY

In 1972, the Congress assigned a high priority to student assistance as the principal thrust of Federal support for postsecondary education. Yet, while observers of higher education finance can describe which institutions receive resources from most Federal student aid programs, public decision makers lack information on which students will receive support or how the resources influence institutional aid practices, student recruitment practices, admission policies, and resource allocations. Further, policy researchers and policy makers lack sufficient understanding about how student aid affects family investment behavior-- in particular, the willingness and ability of parents to contribute toward the educational expenses of their children.

The purpose of this study is to utilize data from the National Longitudinal Study, in unique combination with other data resources, to improve the understanding of the effects of student aid in institutional and family decision making.

This research is important in several respects. It will provide policy makers with a measure of the extent to which financial aid is meeting program objectives. However, there are four relatively recent developments which make this study of the impact of financial aid even more important.

First, while the achievement of equal educational opportunity has been an avowed goal since the War on Poverty, experience continues to show that low income and minority enrollment rates remain as much as two-thirds lower than the enrollment rates for middle income and white students. Often the opportunities in postsecondary education for minorities are limited as much by financial constraints as by social barriers. The enrollment rate differential might be expected to narrow if financial aid resources can be shifted toward programs and allocation mechanisms which seem to target funds on students from disadvantaged families. Our study of institutional financial aid decision making and family responses to financial aid will suggest which types of aid and distribution mechanisms can best meet this objective.

Second, with the exception of the 1975-76 academic year, the rate of increase in enrollments has been falling. Since 1969, the rate of increase in the size of the college-eligible pool has grown more slowly. At the same time, a decreasing share of families with college-age offspring are sending members to college full-time. If higher education is to reverse the trend of declining enrollment rates, it will be necessary to allocate funds for programs which are most likely to induce enrollments. Our study should provide an understanding of how postsecondary institutions package financial aid, thereby affecting the net prices faced by different types of students. This information can lead to policy recommendations for student aid programs that would alter the net prices to the types of students whose enrollment decisions are most affected by net costs of attendance.

Third, since the publication of Cheit's The New Depression in Higher Education in 1971, over forty private colleges have closed their doors or become merged with other postsecondary institutions, citing immense financial distress. The more recent energy crisis has put so much additional pressure on all institutional budgets that many observers are concerned about the prospects for sustaining the independence and vitality of perhaps our largest investment industry (producing, along with students, human capital). To the extent that maintaining a strong, diverse postsecondary education sector is an accepted national goal, the related effects of available student aid funds and budgetary limitations on institutional aid practices need to be studied. If external student aid funds can relieve the pressure on institutional budgets, the diversity and financial health of the postsecondary education sector can be maintained without neglecting the companion goal of equal educational opportunity for all.

Fourth, in the context of recent reports on the "inflation" in college grading and the decline in average SAT and ACT scores, some observers are recommending a renewed national emphasis on merit-based, no-need scholarships. A bill introduced by former Congressman James O'Hara to revise the Title IV student aid programs suggests such a use for student aid funds. The bill proposed the establishment of a new merit scholarship program that would fund nearly all the costs of attendance of able, needy students. Our study can reveal the extent to which measured student ablities influence the amount and type of aid offered by postsecondary institutions. Appropriate modifications in existing student aid programs to promote the enrollment of able high school graduates could be developed.

All four developments serve to emphasize the challenge and importance of student financial aid in promoting enrollment stability and in encouraging disadvantaged and talented students to participate in postsecondary education. This study analyzes the institutional allocation of student aid and the family expenditure response to this aid as a means of indicating the extent to which these challenges can be met. The modeling of institutional and family behaviors and the subsequent empirical analyses developed from the models will permit at least partial answers to a number of specific policy-related questions concerning the impact of student financial aid.

First, do low income and minority students receive larger aid packages, and in what amounts and kind? Does the package differ by type of institution? Earlier evidence is inconclusive on these points. From a survey of schools in 1969-70, the CSS Panel on Student Financial Need Analysis (the Cartter Panel), found that higher income families (who were more likely to attend higher cost schools) received aid packages as large as low income families (College Entrance Examination Board [1971]). Not surprisingly, average awards were $320 larger at private colleges. Unfortunately, this study (and most others) did not collect the entire financial aid package of the student. Further, information on aid offers, as distinguished from actual awards, has been lacking in most studies of financial aid (the CSS Panel is an exception). The data collected by the CSS Panel and other data from a more recent survey of 1972-73 freshmen financial aid applicants (Jones [1975]) revealed that high ability students received larger aid packages than their low ability peers. These findings should be examined again and the analyses extended with the broader National Longitudinal Study.

Second, how do institutions package financial aid offers to students? There appears to be evidence that students do respond to net price (that is, costs of attendance minus financial aid) when making their decisions (see Miller [1971]; Kohn, Manski, and Mundel [1974]; NCFPE [1973], Barnes et al. [1972]; Rainer and Miller [1975]). Yet, the hypothesized determinants of the financial aid offer-- an essential element of the net price facing students-- have for the most part remained untested. A conceptual framework for analyzing these institutional decisions has been formulated by Williamson [1963], and applied to admissions and aid practices by Miller [1975]. Data have been lacking to empirically test this framework. The CSS Panel provided some data analysis of institutional financial aid practices. Columbia University's Bureau of Applied Social Research reported financial aid administrators' methods of packaging around Federal student financial aid (Friedman and Thompson [1971]; Friedman, Sanders, and Thompson [1971]). These studies can be refined and extended.

Finally, what is the effect of financial aid on actual parental contributions for educational costs? The extent to which student aid supplements or substitutes for parental contributions provides a slightly different measure of the effects and effectiveness of Federal programs. This view is of interest because it incorporates not only the level of family support, but also the division of the burden of costs between the parents and student. The emerging redefinition of the independent student suggests another related issue. The Federal presumption has been that parents retain the responsibility for providing support for educational expenses beyond the age of majority, and, in fact, that they are willing and able to do so. Short of resolving the issue of what parents should do, we can provide an answer to the positive question: what is the current level of support provided by parents?

While recognizing that student assistance does affect the enrollment decisions of students and families, we still know relatively little about how financial aid affects the amount of parental resources that go to support the student. McMahon [1974], Wagner [1977], and McMahon and Wagner [1972] have explored the determinants of family investment in postsecondary education, including some preliminary empirical estimates of the impact of different types of financial aid on family and parental outlays. These research results are extended with the NLS data.

A. The Link to Student Financial Aid

A model of institutional behavior is developed in Chapter III. Following an analytical framework based on the economic theory of the firm, postsecondary institutions are presumed to attempt to maximize their own and national objectives. In the model, student aid offers and awards are used to attract potential students with attributes that would enhance these objectives. Offers and awards are made subject to financial and enrollment constraints.

The conceptual framework for analyzing family spending behavior is outlined in Chapter VII of this report. Family outlays on educational costs are presumed to be viewed by the family as an investment and are hypothesized to depend on the attractiveness of the investment to the parents and student. These attributes include, among others, student ability and parental educational attainment. Just as important are characteristics which indicate the capacity of the parents and student to contribute toward educational costs, such as family income, student income, and family size, and student assistance.

B. Research Design

The several issues related to the effect of student assistance are examined using the National Longitudinal Study data base augmented by institutional data collected from a variety of sources. The NLS sample is one of the most recent and detailed national probability samples of high school seniors available. The characteristics of the NLS and the institutional data files are described in greater detail in Chapter II. The pattern of responses for key student and institutional variables is considered in this chapter as well.

A series of tables describing the distribution of student aid across a number of student/family and institutional characteristics are included in Chapters IV and V. The descriptive statistics provide a broad view of the distribution of different types of student aid to particular student and institutional subpopulations. Chapter VI contains a multivariate analysis of the packaging of student aid. Using single equation regression techniques, the sample is partitioned by institution type and control to permit comparisons across sectors.

Differences in parental spending recorded by aided and nonaided NLS freshmen are described in Chapter VIII. The effect of financial aid (and different types of aid) on parental spending for educational expenses is estimated using multiple regression techniques. The sample is partitioned by family income and institution type and control, permitting a comparison of family behaviors among different subpopulations. The relative effects of grant, work, and loans on parental support can be inferred from the results of a two-step procedure. In the first step, the total financial award is included as an independent variable along with family attributes which affect the expenditure decision. In the second step, an estimated parental contribution can be computed from the regression coefficients. Deviations from the "estimated" contribution are explained as a function of the individual components of the financial aid package where appropriate.

One of the major products of this project is the College Board Linked NLS-Institutional File. Institutional characteristics compiled from HEGIS, Office of Education, and American Council on Education data files for each institution listed by the NLS respondents have been added to every NLS record. This data permits the examination of institutional financial aid practices as proposed in this study. In addition, access to the College Board merged institutional files enhances the potential uses of the NLS file for other policy researchers.

C. Student Financial Aid: Leverage for Public Policy

The results of this study attempt to explain the allocative effects of financial aid on institutional and family behaviors. The findings help to illustrate the limits and the promise of student aid--the primary short-run Federal policy instrument--as a means of achieving equal educational opportunity and maintaining diversity in postsecondary education.

From the data presented in Chapter IV, it appears that the distribution of student aid in 1972-73 was greatly influenced by student "financial need"--defined as student costs of attendance less expected family contribution. The entering full-time freshmen enrolled at an institution which relied primarily on private tuition (predominantly private and proprietary) were most likely to receive aid (particularly grants and loans), to receive more than one type of aid, and to receive Federal aid. These same students tended to report larger amounts of total and Federal aid than their peers enrolled in other institutions.

Considering the resources side of the "financial need" equation, low income and minority entering full-time freshmen were most likely to receive aid, in larger amounts and with relatively more gift aid. These students also were favored in the distribution of Federal student assistance dollars.

Institutional student aid budgets were weakly associated with the allocation of all types of aid, Federal and non-Federal. Although the Federal campus-based student aid programs augmented institutional funds, these Federal funds apparently accounted for a relatively small share of total sources of non-family support available to 1972-73 entering full-time freshmen.

These findings were reinforced with the more rigorous multivariate analysis of Chapter VI. Other things equal, factors contributing to financial need were most important in accounting for differences in aid packages. Lower income, greater student costs, or minority racial/ethnic status tended to be associated with larger aid packages containing relatively more grant and scholarship aid and more Federal aid.

On the other hand, student achievement/ability appeared to be less influential in the distribution of financial aid. Academic aptitude proved to be a nearly insignificant influence in the distribution of Federal aid, and, particularly EOG awards. Notably, differences in gift aid most reflected variations in student abilities.

Finally, although significant, the institutional commitment of resources to student aid exhibited a modest effect on the amount and composition of the financial aid package.

Viewed from another perspective, financial aid apparently influenced the level and composition of family investment in postsecondary education. Data from the NLS presented in Chapter VIII, suggest that parental contributions were slightly reduced with the award of financial aid. Importantly, student aid substituted least for parental support among low income and minority families.

As important, the extent to which financial aid substituted for parental support differed according to the type of aid within income groups. Holding the total amount of the aid package fixed, a relatively larger grant and scholarship aid component significantly reduced the extent of substitution for parental contributions only among low income families. Within higher income groups, student loan aid substituted less, and term-time earnings substituted more, for the parental contribution than did all aid taken together.

In sum, these results suggest the leverage of Federal student assistance in institutional and family decision-making. To some extent, it appears that Federal aid encourages the distribution of non-Federal funds to the types of students aided under Federal programs. In 1972-73, these recipients tended to be lower income and minority students. Among families, increased levels of aid, specifically to lower income students, appear to largely augment parental support and to enable increased family investment in postsecondary education. That national goals of equal educational opportunity, maintaining diversity, and developing a highly trained labor force have not been fully realized in no way alters the basic point: Federal student aid can influence decision-making of institutions and students.

CHAPTER II

THE DATA: ATTRIBUTES, NON-RESPONSE, AND ACCURACY OF THE NATIONAL LONGITUDINAL STUDY (NLS) AND THE INSTITUTIONAL DATA FILES

The usefulness and applicability of the results of any research effort depend in great measure on the strengths and weaknesses of the data employed. In this chapter, the student and institutional data used in this study are described, their strengths and weaknesses are discussed, and the methods used to address several problem areas are detailed.

No survey can be expected to collect accurate information from every sample member. While the best way to deal with missing data and reporting errors is to try to avoid them, these problems are certain to occur. In most instances, better survey and questionnaire design and repeated follow-ups to obtain the missing or correct information would likely result in fewer cases with missing data and more accurate data._/ But, these strategies are not available once the initial survey design is implemented, as is the case with the student-reported data in the NLS.

The remaining methods for dealing with these problems are restricted to manipulating the responses in some way (including the imputation of missing data and reweighting the sample). The most elaborate strategies, of course, require considerable amounts of staff and computer resources. Since these resources were not available for this study, our approach has been limited to: (1) determining the extent of the missing data for key variables; (2) assessing the accuracy of the information collected (particulary, financial aid data); and (3) instituting simple edit procedures to impute some missing data and to correct some errors in the reported infor-

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_/ On this point, see our recommendations for improving the quality of the student-reported data in the proposed second NLS cohort (Rice, Wagner, Christoffel, and Tenison (1976)).

mation. All three steps require subjective judgements. And, all of the problems could not be completely overcome. However, these procedures were deemed to be reasonable and within the budget constraints of the project.

It is our belief that, in the absence of other current data sources, the research undertaken in this study leads to useful inferences for Federal policy -- even with the acknowledged non-response and reporting errors in the NLS. So that others can make their own judgements, the magnitude and treatment of the non-response and reporting errors are detailed in this chapter.

The discussion below summarizes the procedures for and findings from the data evaluation phase of the study. In Section A, the National Longitudinal Study sample and the companion College Board Linked Institutional file are briefly described. The non-response and reporting errors for the key sources of support items are considered in Section B. The methods used to edit and impute or adjust the reported amounts are discussed in detail. Estimates of non-response for other important variables are presented in Section C. Finally, a comparison of the weighted NLS "edited" sample with other estimates of first-year enrollments, and the calculation of adjusted weights to compensate for non-response and reporting errors, form Section D.

A. A Description of the Data Files

As a rare combination of student- and institution- reported information, the data used in this study represent a powerful tool for research on the impact of financial aid.

The student-reported data were collected in NCES' National Longitudinal Study (NCES, 1975). Over 20,000 twelfth grade students were selected from a stratified random sample of high schools for the NLS. To increase the number of disadvantaged students in the sample, secondary schools with high proportions of minority students or in low income areas were sampled. Designed to be representative of all 1972 high school seniors, the NLS is a national probability sample (see Fetters (1974) for a more detailed description of the sample).

Almost 93 percent of the students contacted in 1972 provided some information on the Base-Year questionnaire, although response rates to specific questions varied substantially (see Sections B and C below). The Base-Year instrument collected information on student plans and aspirations and family economic and demographic characteristics. SAT and ACT achievement test scores and high school grade averages were obtained from school records.

In October, 1973, the First Follow-Up questionnaire was mailed to each sample member. Through a series of mailings and personal interviews, the response rate to this follow-up was 94 percent. Again, the item non-response differed within the questionnaire. The survey document collected retrospective information from the respondents on their activities since leaving high school. Included in the follow-up were questions on attendance at postsecondary institutions, amounts and kinds of financial support, and costs of attendance.

Institutional data corresponding to the postsecondary institutions applied to or attended were added to each respondent's record, where appropriate. Prepared under this research contract, the College Board Linked NLS-Institutional data file consists of institution-reported data culled from NCES' Higher Education Directory (NCES (1974c)) surveys, the Office of Education's Application to Participate in Federal Student Aid Programs (Tripartite) file (USOE (1972)), and the American Council on Education's 1972 Institutional Characteristics file (ACE (1974b)). The merged file contains type and control codes; institutional revenues, expenditures and student aid resources; the income distribution, racial composition, and size of the entire student body; and median tests scores for the freshman class. Tenison (1976) provides a detailed description of and specification for the College Board Linked NLS-Institutional file.

B. Sources of Support: Assessment and Adjustment

The critical variables in this study are the sources of support items (question 47 in the First Follow-Up). The information collected from these items has been criticized on two counts. First, the item non-response rates appear to be quite large. According to David Selby (1976), as many as thirty-five percent of those who should have provided sources of financial support information failed to do so. Second, for those who do respond, the reported amounts from specific sources (eg., College Work-Study, FISL) may be inaccurate. The assessment of these two problems, and the adjustments made, are discussed separately below.

1. Source Non-Response

For 1972-73 full time students in the NLS sample, an estimated 14% failed to report any source of support amounts in question 47. This non-response rate is considerably smaller than Selby's estimate because the definition of the study group -- those who should have provided the source information -- is different.

In this research project, the key study group included 1972-73 full-time postsecondary students. To properly assess the magnitude of the non-response, an accurate count of this study group must be obtained. Unfortunately, the routing and question stems in the First Follow-Up make this a difficult task. Since the questionnaire was administered in the fall of 1973, students who did not enroll in 1972 might have responded in question

47 if they had enrolled in 1973. While the cost of attendance and source of financial support data cover "any training and education you received after leaving high school and before Fall, 1973," the earlier sections elicit separate information on Fall, 1972 and Fall, 1973 attendance.

To identify the respondents in the study group, a two-step procedure was adopted. First, all NLS respondents were classified according to their enrollment status. Any information which would indicate a 1972-73 attendance was taken to be evidence of a 1972-73 enrollment. Respondents were identified as enrolled (i.e., in the study group) if they:

1. Responded "yes" to the Fall, 1972 enrollment question 29a, except if any "no" items and no "yes" items are answered in the subsequent routing.

or

2. Responded "no" to the Fall, 1972 enrollment question 29a, if any "yes" items are answered in the subsequent routing.

or

3. Provided a name for the Fall, 1972 postsecondary institution attended (question 32a, or question 26a if the same institution was attended in Fall, 1973).

or

4. Reported enrolling at another school during the summer or midyear (question 39) or provided a name for the school (question 40a).

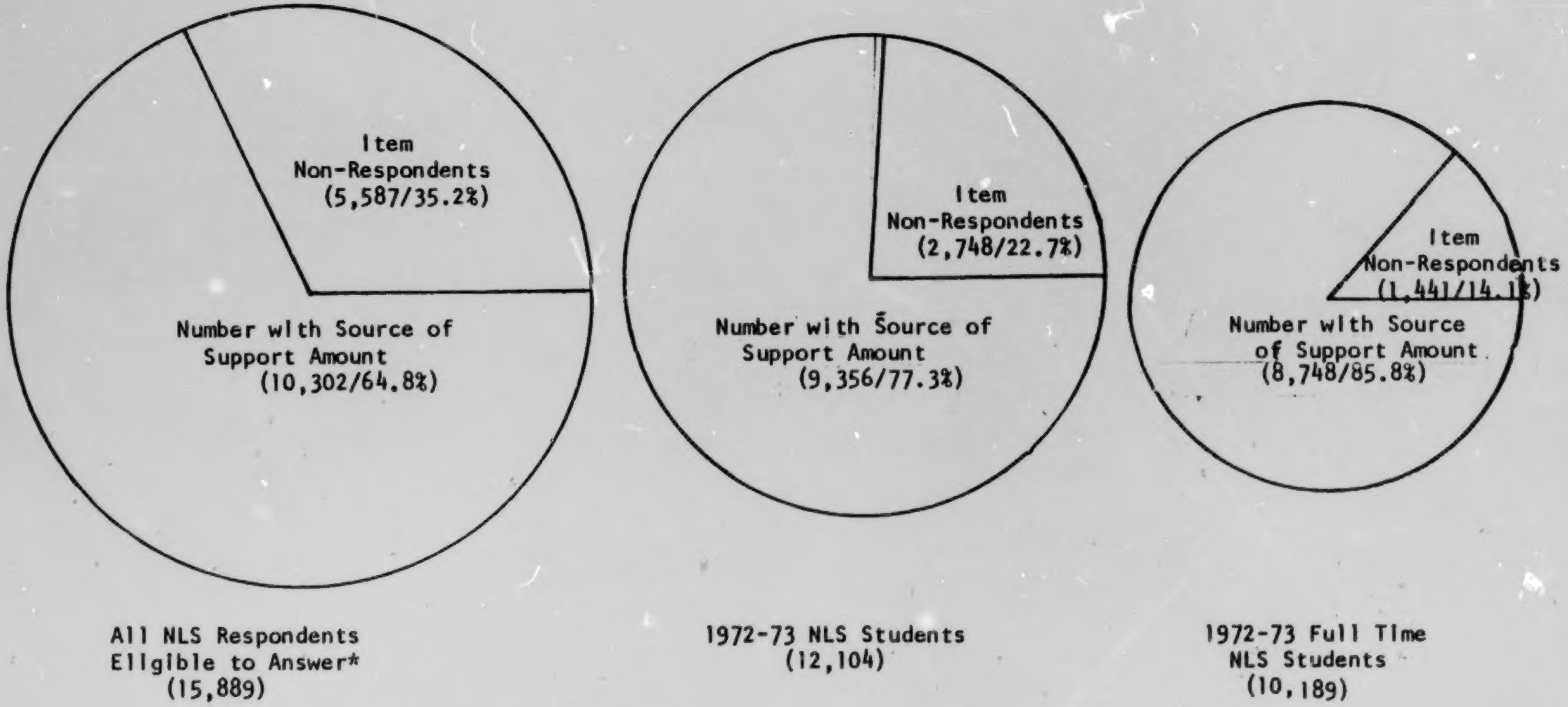
Following these checks, a total of 12,104 NLS respondents were included in the study group (ie., counted as enrolled during the 1972-73 academic year)._/ This compares to Selby's estimate of 15,889 which includes all respondents who were routed into the source of financial support question. By focusing on an identified study group, the estimated nonresponse rate dropped from 35.2% (Selby) to 22.7% (see Figure II-1)._/

_/ With the aid of telephone follow-ups of nearly 30 percent of NLS respondents who failed the RTI computer edit checks, an estimated 11,421 were identified as in school in October, 1972. For the reasons noted above, some of those who passed the computer screen might be excluded from our counts. Approximately 170 cases were added to the 1972 Fall enrollment through the activity state screen.

_/ Included among the 22.7% (2,748 non-respondents) are 188 students (1.6% of the total) who listed a source but refused to provide a dollar amount.

Figure II-1

NON-RESPONSE TO SOURCE OF SUPPORT ITEMS (QUESTION 47)
FOR SELECTED NLS SUBPOPULATIONS



* From Selby (1976).

As a second step, all 1972-73 students were classified according to their attendance status. Since part time students in the NLS are not representative of the population to which they would be compared, these respondents are excluded from much of the analysis. As Figure II-I indicates, limiting the study group to full time 1972-73 students only will omit an additional 1,914 respondents. Of the remaining 10,189 students, 85.8% (8,748) provided a source of support amount._/

Given the very complex routing patterns in the First Follow-Up questionnaire and the crude screens used to identify those eligible to answer the source of support items, some of the NLS respondents classified in this study as 1972-73 full-time students might have been incorrectly included in this study group. While it is impossible to estimate the exact number, there is some evidence that as many as 600 of these respondents should not have been included among those classified as 1972-73 full-time students. This number is an estimate of the NLS respondents who provided very little information on their postsecondary training: no cost of attendance or source of support data, nor the name of the postsecondary institution attended. They did respond to the Fall, 1972 enrollment item (question 29a) and to the 1972 attendance status item (question 33b). If these respondents were excluded from the number eligible to answer the source of support items, the item non-response rate among 1972-73 full-time students in the NLS would be an estimated 8.7%.

_/ Again, the NLS activity state screening results in an estimated 10,320 full-time 1972-73 enrollment for the NLS cohort (10,790, if imputed full time students are included). The differences result from our screening around the enrollment response questions. See Table A-1, Appendix II-A).

2. Reporting Errors

Several simple edit checks were implemented to gauge the accuracy of the student responses to the source of support items.

First, after identifying the study group, the shares of NLS respondents receiving different sources of support and the average reported amounts from these sources were compared with similar data obtained from other recent postsecondary surveys. In presenting the data and results of the comparisons, Wagner and Tenison (1976a) concluded that the recipient shares and the reported amounts of different sources of financial support are generally consistent with the information collected in the other surveys. Many of the differences could be accounted for by the different populations surveyed.

Other observed patterns, however, appeared to reflect reporting errors. To adjust for these errors, a series of simple computer data manipulations were developed. Since the financial support variables represent the focus of the study, the manipulations were limited to adjustments "implied" by other student-reported information. No additional imputing was considered.

The data manipulations principally affect the reported financial support amounts of commuter students. While many of these students accounted for the sources of funds used to meet direct costs (tuition, fees, books, transportation), a large share of commuters failed to report the in-kind support provided by their parents, relatives, or spouses used to meet indirect room and board costs. In these cases, an estimated maintenance amount of about $80 per month was added to both room and board expenses and parent, relative, or spouse support (whichever is appropriate).

Other manipulations included adjusting apparently incorrect dollar amounts reported from a specific program source. For example, 591 respondents listed BEOG as a source of support in 1972-73 even though the program did not begin operations until 1973-74. For these students, a reported Basic Grant less than $1,000 is treated as an SEOG. A reported BEOG greater than $1,000, and listed as the only grant aid scholarship source, is considered as the sum of all grant and scholarship aid rather than support from a specific source. Similarly, 50 respondents indicated support under the GI Bill, although few, if any, would have been eligible for these benefits so shortly after leaving high school. These students are treated as VA War Orphan or Survivor's beneficiaries.

Following the adjustments, two edit screens were imposed in order to identify cases with potentially "bad" data. First, any student who reported less than $800 in total financial support (for a 9 month school year basis) was identified. Second, for the remaining students, the total amount of financial support was compared to the reported (plus imputed) costs of attendance. In cases where the differences were greater than $250, the total amount of financial support was compared to the institutional budget. If the amount of total support ranged from 25 percent below the institutional budget to 50 percent above the institutional budget, the reported financial support data was considered to be acceptable. All other cases were flagged to indicate the presence of potentially "bad" data. These latter students might have reported their anticipated scholarship support for all four years or included the total amount of their savings rather than listing the amount from these sources used to meet current educational costs. With a more elaborate editing strategy -- perhaps requiring a case-by-case manual check--many of these problems could have been addressed.

However, it was not possible to develop a simple computer procedure which could make these rather specific adjustments in an efficient manner.

As a result of the manipulations and screens, an additional 11 percent of the full-time 1972-73 students in the NLS were identified as reporting "bad" data. This leaves about 75 percent of the study group respondents (7,709 cases) who provided an accurate and reasonable accounting of their sources of financial support. For much of the data analysis below, only these respondents are included.

3. Aid/Offer Responses

All NLS respondents were asked to provide information about the types and amounts of financial aid offered from up to three postsecondary institutions.

A total of 9,910 respondents reported that they had applied to at least one postsecondary institution prior to October, 1973. This total is considerably less than the 12,104 respondents identified as enrolled during the 1972-73 academic year or the estimated 15,889 respondents eligible to answer the "school finances" questions in the First Follow-Up (see Figure II-1). For many respondents, the completion of a 24 page survey document may have required more effort than they were willing to make. Others may have been fouled up in the routing. Still others may have refused to answer these questions because they had provided the information earlier (question 47). And, some may have been routed around the questions because the directions permit only those who have "formally applied" to continue in the section._/ For whatever reasons, the discrepancies in the

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_/ For a further discussion of these problems, see Rice, et al. (1976).

case counts alone suggest that responses to the aid/offer questions might not reflect the actual experiences of all those who had considered enrolling prior to October, 1973. We choose to examine this group separately, however, noting where appropriate the possible biases which may influence our results.

Of those students in this study group who were accepted for admission at their first, second, or third choice, the responses to First Follow-Up questions 82, 83 and 84 were examined in detail. These questions ask the student if he applied for financial aid at the school, and if so, what were the amounts of the aid offered (if any).

In general, responses to these questions closely followed the routing patterns. Students who did not apply for aid and those who applied and did not receive an offer did not report any aid offers in the subsequent amount section. On the other hand, students who applied for aid and received an offer may not have reported any amounts in the appropriate place. Specifically, 87% of those who applied and reported receiving an offer from their first choice reported an amount for at least one type of financial aid in the subsequent section. The remaining 13% either dropped out of the routing pattern or simply forgot the amount they were offered. The share of such students increases from 17% for the second choice to 21% for the third choice. As a result, the number of students with aid offers from more than one institution falls rapidly from first to third choice.

Most of the students who did not respond to the aid application question likewise did not enter an amount. Nevertheless, about 20% of the non-responders to the aid application question.for each institution choice entered an amount in the correct place, and for the purposes of the study these will be included in the pool of students with an aid offer.

C. Missing Data for Key Explanatory Variables

A number of the many other variables are vital for the study of the effects of student aid. These items are discussed separately below.

1. Family Income and SES

An estimate of family income was obtained from the student in item 93 in the Base Year questionnaire._/ There are, however, three limitations with the income data reported by the NLS respondents. First, missing data may introduce bias into the analysis. About 25 percent of the cases in the NLS sample do not have a family income estimate. About 20 percent of the respondents failed to answer the question. An additional 5 percent of the sample did not receive either the Base-Year or First Follow-Up Form B questionnaires, and therefore were unable to provide family income estimate._/ The cases with missing data constitute a declining share of the appropriate sample when key subpopulations are compared. The total missing data rate is an estimated 25.1% for all 1972-73 students, 23.7% for all full-time 1972-73 students, and 21.5% for 1972-73 full-time students with accurate school finance data.

Second, respondents may provide inaccurate estimates of family income. Creech (1974) found an overall agreement between parent-reported and student-reported estimates of family income of 29 percent among Base Year respondents. Very low and very high income families exhibited the largest

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_/ If the respondents did not complete a Base Year questionnaire, this item was included in Form B of the First Follow-Up.

_/ The implications for bias in the analysis arising from the two sources of missing data are quite different. Only the non-response rate is appropriate for examining the extent to which certain types of respondents are likely to fail to answer an item.

percent agreement (see Table II-I). There are three problems with the Creech analysis that might tend to understate the level of agreement.

First, the lower correspondence between parent- and student- supplied information for "middle" incomes probably reflects the narrower income intervals in this range rather than lower accuracy. In addition, by using the NLS intervals, Creech would find "no agreement" with a difference of $10 between the student and parent estimates (e.g., students: $15,005; parent: $14,995). An alternate, more reasonable, method that provides an "upper bound" measure on agreement would compare the parent's estimate with the student interval estimate, accepting student responses in one interval above and one interval below the parents' estimate as an "agreement." A further problem with Creech's agreement measure is the lack of precision in the question stem itself. Respondents are asked to provide an estimate of family income without specifying a particular year. For students, this could lead to an estimate of "permanent" income; they would tend to ignore year-to-year fluctuations. Parents, on the other hand, might report current year income._/ If true, Creech's table would be comparing two different measures of income.

A final limitation is that the family income estimated by each NLS respondent falls within income intervals up to $3,000 wide ($1,500 wide near the median income level for all families). One of the major concerns is that these interval estimates can hide the actual relationship between income and parental support within the interval. However, other explanatory variables (such as educational attainment of the family head) might pick

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_/ The interpretation of the effect of the income variable will be different depending upon the definition used -- permanent or current.

Table II-1

ETS Validity Study

Percentage Frequency Distributions of Family Income

Income (Dollars)	Percentage Freq. from Parents	Percentage Freq. from Students	Percent Agreement
Less than 3,000	3.18	5.64	73
3,000-5,999	11.05	8.89	49
6,000-7,499	8.14	7.67	20
7,500-8,999	9.34	8.81	29
9,000-10,499	10.82	10.31	18
10,500-11,999	5.52	9.17	25
12,000-13,499	8.92	9.39	40
13,500-14,999	7.80	6.53	11
15,000-18.000	15.52	5.23	15
Over 18,000	15.04	10.32	44
No Response	4.68	18.05	--
Overall rate of agreement			29%

Source: National Longitudinal Study, Appendix F, Table F-16, p. F-226.

(reproduced from Creech [1974], p.108)

up some of the variation removed when an interval estimate (rather than a point estimate) of income is used. For example, within the $3,000 to $6,000 income interval, a family with a high school graduate as head of household will probably have an income closer to $6,000 than a family with a non-high school graduate as its head. In this case, it is important that as much of the variation in parental support which is not caused by financial aid be explained. The inclusion of other SES variables can help overcome the limitation of grouped income data.

For some purposes, a less precise measure of family income and wealth can be used. For every NLS respondent with valid responses to at least two of five component variables, an index of socio-economic status (SES) has been computed._/ Missing responses were imputed using the component mean from available responses for the designated subpopulation._/ As a result, SES missing data rates for all sample members is 3%. Among full-time 1972-73 students in the NLS, about 1% do not have a computed SES score (see Table A-2, Appendix II-A).

2. Racial/Ethnic Group

The respondent indicated his racial/ethnic group in item 84 of the Base Year questionnaire (if no Base Year questionnaire was filed, this information was collected in Form B of the First Follow-Up document). About 7 percent of all NLS cases do not have a racial/ethnic identification.

_/ The SES index is computed from five components: 1) father's education; 2) mother's education; 3) parent's income; 4) father's occupation; 5) household items. (See RTI (1975)).

_/ For imputation, the respondents are stratified by race, high school program, and aptitude. See NCES (1976)..

Again, respondents who did not return a Base-Year questionnaire and also did not receive the First Follow-Up Form B questionnaire (i.e., received First Follow-Up Form A only) were not asked the racial/ethnic question. This means that actual non-response is much lower -- closer to 2 percent. Creech also tentatively concluded that non-whites are slightly more likely to have been non-responders than whites. The missing data rates for the key subpopulations are quite similar (see Table A-2, Appendix II-A).

3. Student Ability

Two separate measures of achievement/ability are taken from the NLS file. The most appropriate measure for the study of the distribution of student financial aid is the score on a standardized college admissions test. About 8,000 NLS respondents have either an ACT or SAT score on the NLS file. All have been converted to their SAT-equivalent using the concordance tables developed by Chase and Barritt (1966). With the assistance of Rex Jackson at the Educational Testing Service, NLS Test Book scores were converted to their SAT-equivalents for students without a reported ACT or SAT score._/ Without converting Test Book scores, 42.0 percent of all 1972-73 students on the NLS file do not have a reported SAT or ACT score. Using the SAT-equivalents of NLS Test Book scores for respondents with no SAT or ACT score, the missing data percentage drops to 13.4 percent of 1972-73 full-time students with accurate financial data (see Table A-2, Appendix II-A).

A second measure of student achievement/ability is given by the high school grade point average. Using data collected from high school

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_/ The concordance tables are incorporated in a communication from Mr. Jackson to the author, dated August 3, 1976. The general procedure is outlined in Humphrey Doermann's paper, "The Future Market for Collge Admissions," in CEEB (1976).

counselors in the SRIF, the NLS sample member was assigned a grade point average on a 14 point scale._/ In the entire sample, high school grades are missing from 17.5 percent of the cases. Cases without an SRIF account for about 7 percentage points of the missing data rate. Comparable missing data percentages for all 1972-73 students, and 1972-73 full time students with accurate school finances data are 16.9% and 16.4%, respectively.

4. Institution Type and Control

Three institution type and control code variables are present on the analysis file. NLS respondents were asked to identify the appropriate type and control codes for the institution actually attended during the 1972-73 academic year. The estimated combined non-response on the type/control item decreased from 12.3% for all 1972-73 students to 3.2% for 1972-73 full time students with accurate school finances data.

The institution type and control code information is also available from the College Board Linked NLS-Institutional file. Since these are institution-provided codes, they are likely to be more consistent and accurate. Further, the categories are probably more useful for the study of institutional financial aid practices and any resulting inferences for public policy.

Tenison (1976) reported that 10 to 15 percent of the postsecondary institutions coded on the NLS master file could not be linked with institutional data from the College Board file. For 1972-73 students, 81% had the CEEB type/control code appended to their NLS record. For the 1972-73 NLS full-time students

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_/ ETS converted reported alphanumeric and numeric grade point averages to the 14 point scale. Where high school grades are not reported, the grade average has been imputed from class rank (See RTI (1975), Appendix H).

with only accurate financial data 88.5 percent were flagged with the College Board institutional code.

A more detailed institution classification was developed by the Carnegie Commission. This classification emphasizes institutional mission by distinguishing among major research, doctoral, and comprehensive colleges. In many cases, the classification would also reflect differences in per student costs (see Chapter IV below). Carnegie institutional codes are available for 83.3% of the respondents attending full-time in 1972-73 reporting accurate school finances data.

D. Representativeness of NLS Sample

As a final step in the data evaluation stage, the selected sample of 1972-73 full-time entering freshmen with accurate finances data was reweighted to correct for cases dropped due to missing or inaccurate "school finances" data (item 47). Reweight factors are assigned to members of the selected study group sample according to student SES score and high school grade point average quartiles. In effect, the larger the school finances non-response for students of a given SES score and grade point average quartile, the larger the reweight factor. Almost all of the reweight adjustment factors ranged between 1.0 and 1.5. For respondents with no SES or high school grade point average, a reweight factor of 7.0 was necessary. These cases account for a very small share of the total sample (less than one-tenth of one percent); hence, this large factor is not likely to greatly affect the reweighted distribution of respondents.

Table II-2 distributes the reweighted sample of 1972-73 NLS full-time freshmen by institution type and control. Since data elements collected in both the Base-Year and First Follow-Up questionnaires are employed,

Table II-2

1972-73 ENTERING FULL-TIME FRESHMAN ENROLLMENTS
(Weighted Count)

	FIRST-YEAR ENROLLMENTS (in thousands)		
	National Longitudinal Study --- 1972-73 Full-Time Entering Freshmen	NCES Fall Enrollment --- 1972 Full-Time, First-Time Students	ACE Freshman Norms --- 1972 Full-Time, First-Time Freshmen
TOTAL	1,522		
COLLEGIATE	1,367	1,590	1,558
Public Four-Year	646	624	573
Public University	263	266	281
Other Public Four-Year	383	358	292
Public Two-Year	374	563	553
Private Four-Year	315	350	376
Private University	77	83	78
Other Private Four-Year	238	267	299
Private Two-Year	32	52	55
NON-COLLEGIATE	154	—	—
Proprietary	77	—	—
Vocational	57	—	—
Other	20	—	—

SOURCES: Col. (1): National Longitudinal Study (1975).
Col. (2): National Center for Education Statistics (1974a).
Col. (3): American Council on Education (1972).

only respondents with both survey documents are included in the weighted counts.[/] The weighted counts compare quite well with the institution-provided enrollments as reported by NCES and the American Council on Education. In most sectors, the weighted NLS sample exhibits slightly lower first-year enrollments than do the institutional data sources. The reweighted NLS full-time enrollment at public two-year postsecondary institutions totals an estimated 350,000, nearly 200,000 less than the first-year full-time enrollments reported by the institutions themselves. Since the NLS does not include older first-year postsecondary students, differences of this size are not unexpected.

As a simple check for potential response biases, the reweighted sample was partioned again across family income, racial/ethnic group, sex, and achievement/ability categories. The resulting distributions are presented in Table II-3 along with similar distributions of respondents in other 1972-73 postsecondary samples. Given the differences in sample composition and survey items, the weighted distribution of entering full-time freshmen in the NLS by income, race, and sex compares quite well with the other distributions. Since SAT scores have been imputed for NLS respodents for whom no scores were available, the differences in distributions of students by SAT score are to be expected.

Among the three attributes, NLS respondents were most likely to omit an estimate of family income. The income non-responder was slightly more likely,

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_/This procedure also reduces the missing data rates for many of the key variables examined above. In particular, the family income variable missing data rate declines to 18%, racial/ethnic data to 2%, SAT-equivalent to 2%, and a merged institutional type and control code to 1%.

Table II-3

A Comparison of the Weighted Distributions of Respondents in 1972-73 Postsecondary Surveys by Key Economic and Demographic Attributes

ATTRIBUTE	PERCENT OF RESPONDENTS		
	National Longitudinal Study --- 1972-73 Entering Full-Time Freshmen	American Council on Education --- 1972-73 Full-Time Collegiate Freshmen	College Entrance Examination Board --- 1972 College-Bound Seniors
FAMILY INCOME[a]	100.0	100.0	99.0
Under $ 7,500	19.5	20.2	20.0
$ 7,500 - $10,500	21.0	15.8	18.5
$10,500 - $15,000	28.0	26.9	27.5
Over - $15,000	31.5	37.1	33.0
RACIAL/ETHNIC GROUP[b]	100.0	102.1	100.0
White	87.5	87.3	87.0
Black	6.6	8.7	8.0
Hispanic	2.4	2.1	2.0
Other	3.6	4.0	3.0
SEX	100.0	100.0	100.0
Male	50.2	53.9	51.3
Female	49.8	46.1	48.7
ACHIEVEMENT/ABILITY (SAT)[c]	100.1		100.0
Under 800	43.5		32.0
800 - 950	19.6		25.0
950 - 1,100	20.3		22.0
Over 1,100	16.7		21.0

(Table II-3 continued)

[a] Missing data rates for the family income attribute are 17 percent for the reweighted NLS entering full-time freshmen and 12 percent for College-Bound Seniors completing the Student Descriptive Questionnaire (not avail-available for ACE Norms).

[b] Missing data rates for the racial/ethnic group attribute are 1.3% for the reqeighted NLS entering full-time freshment and 2.1% for College-Bound Seniors completing the Student Descriptive Questionnaire (not available for ACE Norms).

[c] For NLS entering full-time freshman, SAT score imputed from available ACT or NLS Test Book score. Distribution for College Bound Seniors includes test takers who did not complete the Student Descriptive Questionnaire (increasing the population size for this item only by 50 percent) and is based on verbal score only.

SOURCES:

Col.(1): see text; Col. (2): American Council on Education [1972]; Col. (3): College Entrance Examination Board [1974].

to be white and lower ability, but the distributions are marginally affected when the non-respondents are excluded.

Appendix II-A

Case Counts and Missing Data Rates for Key NLS Subpopulations

Table A-1

RESPONDENTS IN DEFINED NLS STUDY GROUPS BY SOURCE OF COUNTS

Study Subpopulation	Source of Counts		
	CEEB Screened Count	NLS Enrollment Question Count	NLS Activity State Count
	(1)	(2)	(3)
Enrolled October, 1972	12,103	11,255[a] 11,795[b]	11,421
Enrolled Full Time October, 1972	10,189	10,272	10,320[c] 10,709[d]

[a] Includes all "yes" responses to question 29a in First Follow-Up.

[b] Includes students who answered questions in 1972 enrollment section.

[c] Includes all "yes" responses to question 29a in First Follow-Up plus those indicating full time study in telephone follow-up.

[d] Includes imputed full-time students

SOURCES:

Column (1): See text

Column (2): Tabulated from responses to questions 29a and 33b in the First Follow-Up. See RTI [1975].

Column (3): Tabulated from responses to questions 29a and 33b in the First Follow-Up plus telephone follow up of respondents who failed RTI'S "key" question screen. See RTI [1975].

Table A-2

MISSING DATA FOR KEY VARIABLES BY DEFINED NLS STUDY GROUPS

ITEM	NLS STUDY GROUP							
	All NLS Respondents (21,328 respondents)		1972-73 NLS Students (12,104 respondents)		1972-73 Full Time NLS Students (10,189 respondents)		1972-73 Full Time NLS Students with Accurate Financial Data (7,709 respondents)	
	Number with Missing Data	Percent with Missing Data	Number with Missing Data	Percent with Missing Data	Number with Missing Data	Percent with Missing Data	Number with Missing Data	Percent with Missing Data
Family Income and SES								
Parental Income	5,535[a]	26.0%	3,035[b]	25.1%	2,410[e]	23.7%	1,646[h]	21.4%
SES Raw Score	605	2.8	278	2.3	91	0.9	31	0.4
Racial/Ethnic Group	1,507[a]	7.1	880[b]	7.3	730[e]	7.2	534[h]	6.9
Student Achievement/Ability								
SAT-Equivalent	NA	—	5,078	42.0	3,801	37.3	1,036[k]	13.4
High School GPA	3,733	17.5	2,047	16.9	1,698	16.7	1,267	16.4

(continued)

Table A-2, concluded

ITEM	NLS STUDY GROUP							
	All NLS Respondents (21,328 respondents)		1972-73 NLS Students (12,104 respondents)		1972-73 Full Time NLS Students (10,189 respondents)		1972-73 Full Time NLS Students with Accurate Financial Data (7,709 respondents)	
	Number with Missing Data	Percent with Missing Data	Number with Missing Data	Percent with Missing Data	Number with Missing Data	Percent with Missing Data	Number with Missing Data	Percent with Missing Data
Institution Type								
NLS Type/Control	NA	___	1,493	12.3%	423	4.2%	236	3.1%
CEEB Type	NA	___	2,305[c]	19.0	1,550[f]	15.2	881[i]	11.4
Carnegie Type	NA	___	2,946[d]	24.3	2,080[g]	20.4	1,288[j]	16.7

[a] Includes 1,173 students who answered Form A only. Corrected non-response would be 20.5% for income and 1.6% for race.

[b] Includes 697 students who answered Form A only. Corrected non-response would be 19.3% for income and 1.5% for race.

[c] Includes 19 cases with "central office" institutional data for which the CEEB code is actually zero.

[d] Includes 660 cases with institutional data but no Carnegie Code, ie., the ACE segment is absent. Corrected non-response would be 18.9%.

[e] Includes 580 students who answered Form A only. Corrected non-response would be 18.0% for income and 1.5% for race.

[f] Includes 17 cases with institutional data and a zero CEEB code.

[g] Includes 547 cases with institutional data but no ACE segment.

[h] Includes 439 students who answered only Form A. Corrected non-response would be 15.7% for income and 1.2% for race.

[i] Includes 13 students with a "central office" institution.

[j] Includes 420 students with institutional data but no ACE segment.

[k] SAT-equivalent score were augmented by converting NLS Test battery scores into SAT equivalents for students who had no SAT or equivalent.

PART A

THE ROLE OF FINANCIAL AID IN INSTITUTIONAL DECISION MAKING

CHAPTER III

STRETCHING THE FINANCIAL AID BUDGET: The Packaging of Awards

Student financial aid is the principal means by which public policy makers at all levels can intervene in institutional admission and financial aid practices. This chapter presents a conceptual framework of institutional decision-making from which hypotheses about the effectiveness of Federal student aid policy can be derived.

A. An Overview

The basic framework for studying the determinants of aid awards to students comes from Miller [1975] and is traceable to earlier work by Williamson [1963] and Niskanen [1970]. When applied to our proposed research, the analytical framework can be briefly described as follows: if institutions (and Federal aid programs, through the institutions) seek to enroll students with certain attributes to meet specific objectives, then financial aid will be used as a means of attracting students with the attributes they desire. For example , low-income and minority students may receive relatively larger aid offers if the institution (and the nation, with public funds) is trying to encourage equal educational opportunity. Large and attractive aid packages may be offered to the most able, motivated students if the institution is attempting to develop and maintain a high academic quality.

B. The Institutional Framework

Institutions engaged in postsecondary education exhibit at least one of several unique features which distinguish them from most other producers of goods and services in the economy. Three characteristics of institutions in the postsecondary education industry are obvious: the blending of public and private funds; the ability to charge different "prices" to different students; and, the presence of non-profit incentives.

Blending of public and private funds. At nearly all postsecondary institutions, operating revenues are obtained from both public and private sources. Thus, since part of their revenues are derived from private sources (e.g., students, endowments, private giving), institutions classified in the "public" sector are not entirely public enterprises. Similarly, even though some institutions are profit-making, their receipt of public funds for student aid and other uses suggests that these enterprises are not altogether "private."

Charging different "prices." Through application, admissions, and financial aid procedures, postsecondary institutions are able to identify certain types of students. Once the applicants are identified, different policies for admission and price can be established for different groups. That in-state or in-district students are preferred in both admissions and pricing (via lower in-state or in-district tuitions) is an obvious example of the public institution's ability to charge different "prices" to different students. The packaging of financial aid permits further differentiation in "price" among students.

Pursuing non-profit objectives. Most postsecondary institutions are chartered as public or non-profit institutions. Subject to financial solvency, the non-profit institution is free to pursue institutional and public objectives other than maximizing the difference between total revenues and total costs. Even proprietary institutions might be expected to forego extra profits while pursuing other objectives. These latter institutions are not likely to be tightly constrained by market forces. Hence, the scope for managerial, non-profit behavior is considerable.

In view of these characteristics, a more general framework of the goals, activities, and constraints of the postsecondary institution must be developed.

1. Institutional Goals

The postsecondary institution can be viewed as attempting to achieve a number of partly overlapping and partly competing objectives. One of these objectives might include a countinuing contribution to the creation of new knowledge through basic research. Another institutional objective might be providing public services in an institutionally-run hospital or an agricultural extension program. For the most part, however, the educational institution devotes the largest share of its available resources to developing a supply of trained manpower. Within this broad mission of teaching, the institution may attempt to achieve several goals. Promoting equal educational opportunity through the training of increasing numbers of low income and minority students is one example. Enhancing institutional prestige and quality through the training of relatively larger numbers of high ability students is another. One can imagine, within this broad mission, several other "enrollment" goals -- developing an internationally heterogeneous student body; changing the relative numbers of in-state or in-city students; altering the enrollment distribution among fields of study (see Beck and Ryan [1975]).

Thus, two simultaneous goals might be postulated. First the postsecondary institution would attempt to attract and to enroll the greatest number of qualified applicants. Second, the institution would attempt to attract and enroll greater numbers of applicants from the groups of students which contribute most toward institutional objectives (the "enrollment" goals above).[1]

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[1] This conception of student types follows the treatment in a number of similar studies. In studying the provision of health care in hospitals, Newhouse [1970] distinguishes between "quantity" (of beds) and "quality" (of equipment, private rooms, etc.). Niskanen [1970], Migue and Belanger [1974], and Williamson [1963] agree that some discretion in pursuing non-profit goals is present in a wide variety of institutional settings. Their separate models lead to different hypotheses about how the discretion is exercised, but this disagreement does not alter the basic point: Institutions can pursue more than profit-maximizing or quantity-maximizing goals.

The assumption that the institution does attempt to achieve these and other goals implies that applicants for admission are ranked or sorted in some fashion according to their attributes. Applicants with specific attributes are valued according to their marginal contribution to institutional goals. More formally, let U be the objective function of the institution, where E_k are the numbers of enrolled students with specific attributes, k:

$$U = U(E_k, \varepsilon) \qquad k = 1, \ldots, n \tag{1}$$

The enrollment of an additional student with attribute k provides a "marginal return" in two ways. First, the enrollment contributes to the total enrollment goal. Second, the enrollment contributes to meeting a specific objective or to performing a specific institutional function.

2. Admission and Financial Aid Offer Decisions

From the institution's standpoint, two steps precede the actual disbursement of funds: application/admission and financial aid offer.

In the first step, institutions accept applicants in accordance with admissions policy. In many cases, the applicant must meet minimum academic standards. In other instances, a maximum number of out-of-state or out-of- district applicants may be admitted. The institution's attempt to promote equal educational opportunity may call for recruitment of minority and disadvantaged students. Where the postsecondary institution has adopted an open admissions policy, the scope of admissions decisions is, of course, greatly reduced._/

_/Admissions and records staff may still be required to judge the qualifications of applicants (e.g., high school diploma or equivalent). The more detailed evaluation of student capabilities and student attributes would not be necessary, however.

More generally, let M_k be the number of applicants with the k^{th} attribute and M_k^* be the number of admitted applicants. Then, the admissions constraint is given by:

(2) $$M_k^* \leq (M_k)$$

In no instance can the institution admit more students of a given type k than apply.

Of the admitted applicants, some proportion will actually enroll. Miller [1975] calls this proportion the "show-up" rate, a_k. Thus,

(3) $$E_k = a_k \times M_k^*$$

The show-up rate, a_k, really represents an aggregate demand relationship for potential students with the k^{th} attribute. The institution can affect the show-up rate by offering financial aid to reduce the net "price" of an enrollment to the family. While it cannot predict how any single family will respond to the aid offer, the institution can estimate how the financial aid offer $(A_{i,k})$ will affect the show-up rate. Hence,

(4) $$a_k = f\,(A_{i,k})\text{ , for all i programs.}$$

Here,

(4a) $$\frac{\partial a_k}{\partial A_{i,k}} > 0$$

(4b) $$\frac{\partial a_k}{\partial A_{i,k}} \geq \frac{\partial a_k}{\partial A_{h,k}} \quad , i \neq h$$

(4c) $$\frac{\partial a_k}{\partial A_{i,k}} \geq \frac{\partial a_m}{\partial A_{i,m}} \quad k \neq m$$

Three conditions are imposed on the show-up rate function (4). First, a financial aid offer will increase the show-up rate for potential students with attribute k (4a). Second, different types of financial aid can have different effects on the show-up rate (4b). Finally, different types of students may not respond to identical aid offers in the same way (4c).

3. Institutional Constraints

As in most behavioral models of this kind, there are costs associated with attempts to reach the institution's objectives. Since these costs influence admissions and financial aid decisions, it will be helpful to describe in detail the constraints which impose the costs.

Total Enrollment Constraint. In most institutions, the student body size cannot exceed a given number of students, E^*. This upper bound on size has, for the most part, been defined by the institution's physical capacity. In some cases, the total enrollment constraint has been imposed by governing boards, state or local executives, or state legislatures. While this constraint was probably a major influence in admissions and financial aid practices in the middle and late 1960's, the general decline in the rate of growth of enrollments has likely diminished its impact.

$$E^* \leq \sum_k E_k \qquad (5)$$

Two sets of institutions might still be confronting a total enrollment constraint. First, the very high quality public and private institutions are probably receiving many more applications from qualified potential students than their facilities or imposed limitation can accomodate. Second, the rapidly expanding commuter schools -- public community and vocational schools and urban state four year colleges -- may be experiencing a growth in enrollments that severely strains facilities, staff, and state or local enrollment planning targets.

Instructional Budget Constraint. Simply stated, income for instructional purposes from tuition, fees, public subsidies, and private sources must cover the costs associated with this function. If these funds are inadequate, unrestricted funds which were available for student aid might be diverted to meet instructional costs. In particular, let C = instructional costs per student. Then,

$$C \cdot \sum_k E_k \leq TF \cdot \sum_k E_k + G \cdot \sum_k E_k + I \cdot \sum_k E_k + P \cdot \sum_k E_k \qquad (6)$$

where

TF = stated tuition and fees' per student

G = federal state, and local subsidy per student

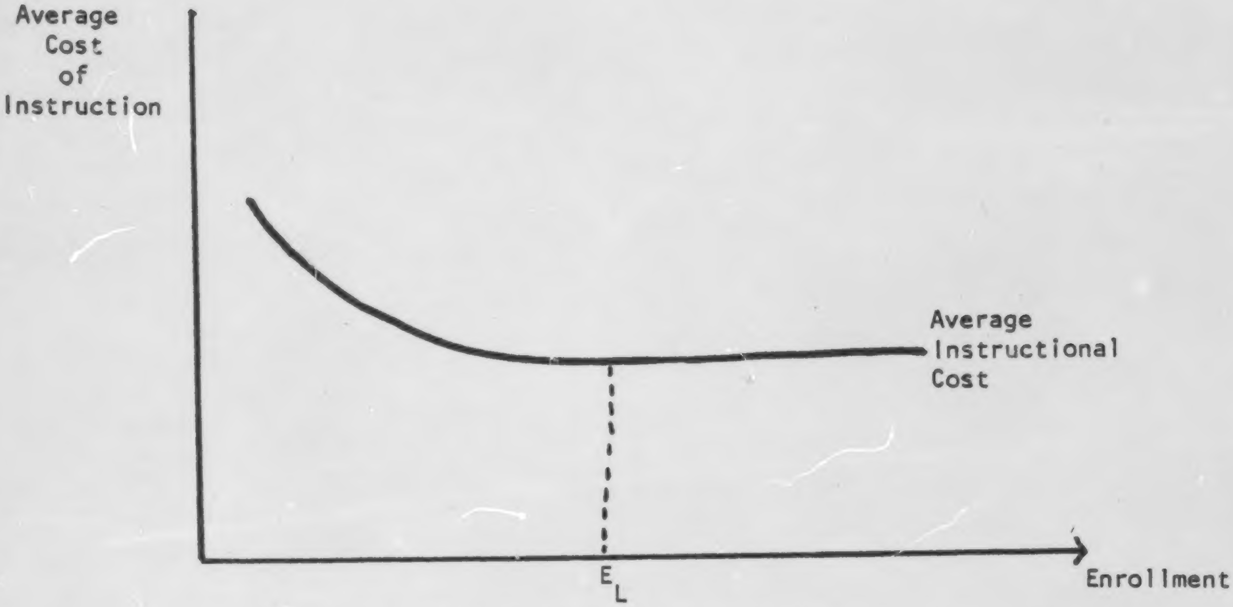
I = endowment income per student

P = private gifts and bequest per student

Note that Exp, the sum of all fixed and variable costs on instruction allocated per student, can vary with the level of total enrollment (see D. W. Verry [1976]for a discussion of institution scale effects). As Figure II-1 demonstrates, increasing enrollments up to E_L will permit scale economies and lower average instructional costs. Froomkin [1976] has pointed out, however, that about a third of all postsecondary institutions experienced a decline in enrollments from 1970-71 to 1973-74. Further, those institutions which lost students also faced rising average costs of instruction. While partly attributable to the fixed costs faced by institutions in the short run, these findings also suggest a possible loss of scale economies (sliding below E_L), with the accompanying need to meet costs through tuition increases or a reallocation of institutional funds.

On the other hand, there is no inherent reason for the institution to operate at the least cost enrollment level. Indeed, as noted above, so long

Figure III-1



POTENTIAL SCALE ECONOMIES: AVERAGE INSTRUCTIONAL COSTS

as funds are available to meet the associated costs, the institution may choose to operate at any enrollment level in attempting to pursue institutional goals.

Student Aid Constraints. Funds for financial aid are received from a number of sources, both public and private. The distribution of these funds is subject to three simultaneous constraints: award constraints, packaging constraints, and budget constraints.

Most Federal aid programs, and a number of state and private programs, are categorical. That is, restrictions may be imposed to limit student eligibility and award amounts of specific student types. For example, in 1972-73 the Federal EOG program limited eligibility to students with annual family income below $9,000 and limited awards to one-half of the total financial aid package.

Alternatively, some state aid and funds from endowments and gifts are essentially unrestricted. These funds can be used to meet the matching requirements in the categorical programs or to make awards subject to institutional policy.

To reflect the restricted use of some student aid funds, let $V_{i,j,k}$ be a vector of j award constraints affecting the size of award to students with attribute k in the i^{th} student aid program. Each element in the vector reflects independent program eligibility and award criteria, program matching requirements, and packaging policy, etc. If $A_{i,k}$ is the award of financial aid to the student with attribute k (where A_i is a vector of i aid types -- grants (EOG, State), loans (NDSL, etc.), and work), the student aid award can be expressed as:

$$A_{i,k} \leq V_{i,j,k}, \text{ for all } i \text{ and } k. \quad (7)$$

where

$A_{i,k}$ = i^{th} type of financial aid offer to the k^{th} type of student (grant, loan, or work; or, specific program, such as EOG, NDSL)

$V_{i,j,k}$ = j award constraints in the i^{th} student aid program for the k^{th} type of student.

Financial aid might be distributed on criteria other than need (defined as total costs of attendance (TC_k) minus expected family contribution (PC_k)). But, in almost every instance, the total aid package will not exceed total costs of attendance. This limitation can be labelled the packaging constraint, represented as:

$$\sum_i A_{i,k} \leq TC_k \quad (8)$$

for the student with attribute k.

Finally, a student aid budget constraint limits the total disbursements that can be made of the i^{th} type of student aid. This constraint is shown as:

$$\sum_k A_{i,k} \cdot E_k \le B_i \tag{9}$$

for all i types of student aid.

C. The Student Aid Distribution Function

Conceptually, the institution will attempt to enroll specific numbers of students of a given type in striving to meet its goals. In practice, it is the admissions staff and financial aid staff, through their activities, who implement policies which are intended to serve the institution's objectives. These administrators view applicants in light of their attributes and their enrollment probabilities, admitting those for whom the potential return to the institution is greater than the associated costs of enrollment. In this case, the marginal return can be defined as the contribution the additional k^{th} type of student makes to institutional objectives plus any tuition income received. The costs include tuition waivers and other subsidies required to provide the instructional resources for the enrollment of the student.

More formally, maximize institutional objectives (1), subject to the enrollment constraint (5), the instructional cost constraint (6), the student aid constraints (7), (8), (9), and admissions and offer constraints (2) and (3).

$$\begin{aligned} L = {} & U\ (E_k) \\ & + \lambda\ (E^* - \sum_k E_k) \\ & + \phi\ [(TF+G+I+P) \cdot \sum_k E_k - C \cdot \sum_k E_k] \\ & + \sum_k \Gamma\ (TC_k - \sum_i A_{i,k}) \\ & + \sum_k \sum_i \sum_j \pi_{i,j,k}\ [A_{i,k} - V_{i,j,k}] \\ & + \sum_i \Psi\ [\sum_k A_{i,k} \cdot E_k - B_i] \\ & + \sum_k \Omega\ (M_k - M_k^*) \\ & + \sum_k \Theta\ (E_k - a_k \cdot M_k^*) \end{aligned} \tag{10}$$

By assuming that the admissions and aid offer constraints are not binding, the partial derivatives of the Lagrangian in (10) can be set to zero to obtain the first order equilibrium conditions for enrollments of specific types of students (see Appendix III-A for the derivation).

Of particular interest in this study is the student aid distribution function. Taking the partial derivative of the Lagrangian with respect to the type of student aid ($A_{i,k}$) gives the first order equilibrium condition for the distribution of student aid (see Appendix III-A). From this, the student aid distribution function can be described. That is, student aid may encourage greater numbers of desired types of students to enroll; these enrollments contribute to both institutional objectives and institutional revenues. Balanced against these benefits are the added costs for instruction, space, and student aid.

Submitting this implied student aid distribution function to empirical test can provide estimates of the extent to which institutional and national objectives and constraints explain the financial aid award to the student. The general form of the aid distribution function can be written as:

$$(11) \quad A_{i,k} = f\,(Y_k,\ SAT_k,\ R_k,\ \overline{Y}_k,\ \overline{SAT}_k,\ TC_k,\ \widehat{PC}_k,\ C,\ TF,\ G,\ I,\ P,\ B_i,\ V_{i,j,k}\ \mu)$$

$A_{i,k}$ = i^{th} type of financial aid offer to the k^{th} type of student (grant, loan, work; or, specific program, such as EOG, NDSL)

Y_k - disposable family income, excluding student earnings

SAT_k = student's SAT score, or other ability measure

R_k = student's race

$\overline{Y}_k$ = the median family income of institution

$\overline{SAT}$ = the median SAT of the institution (or comparable ability measures)

TC_k = total costs of attendance

$\widehat{PC}_k$ = expected parental contribution

C = instructional costs per student

TF = stated tuition and fees per student

G = federal, state, and local public subsidy per student

I = endowment income per student

P = private gifts and bequests per student

B_i = total student aid budget for i^{th} type of financial aid

$V_{i,j,k}$ = program guidelines that restrict the amount of aid to a particular type of student (for example, only to "exceptionally" needy; full-time only; all but Freshmen).

μ = random disturbance

Briefly, then, the postsecondary institution can be viewed as using student aid to reduce the net prices to certain types of students in order to encourage their enrollment. The enrollment of these types of students (e.g., low income, minority, high ability) is considered to enhance the institution's own goals. However, the actual student aid award is constrained by the limitation on total student body size, the need to meet the basic costs of instruction, and the requirements on the distribution of student aid funds.

APPENDIX III-A

Packaging Student Aid: Derivation of Effects

A. The Analytical Framework[a]

Let the institution's objective function be given by:

(A.1) $$U_T = U\ (E_k)$$

where

E_k = enrollments of students with attribute k

The enrollment function can be represented by:

(A.2) $$E_k = E\ (M_k,\ M_k{}^*,\ A_{i,k})$$

where

M_k = the number of applicants with attribute k

$M_k{}^*$ = the number of admitted applicants with attribute k

$A_{i,k}$ = the i^{th} type of financial aid award to the k^{th} type of admitted applicant

The enrollment function is limited by applicant and admissions constraints.

(A.2a) $$M_k{}^* \leq M_k$$

(A.2b) $$E_k \leq M_k{}^*$$

---

[a] This derivation draws closely upon the development by Miller [1975], and related work by Williamson [1963].

The financial aid award is assumed to affect the number of admitted applicants who enroll. Letting a_k represent the share of admitted applicants who enroll (the show-up rate),

(A.3) $$E_k = a_k \cdot M_k^*$$

and $$\frac{\partial a_k}{\partial A_{i,k}} \geq 0$$

The institution enrolls students subject to a series of institutional constraints. These are:

Enrollment Constraint

(A.4) $$\sum_k E_k \leq E^*$$

where

E^* = institutional enrollment ceiling

Expenditure Constraint

(A.5) $$(TF + G + I + P) \cdot \sum_k E_k \geq C \cdot \sum_k E_k$$

where,

TF = stated tuition and fees revenues per student
G = government subsidy per student
I = endowment income per student
P = private gifts and bequests per student
C = total instructional costs per student

Student Aid Award Constraints

(A.6) $\sum_{i} A_{i,k} \leq TC_k$

where

TC_k = total student costs of attendance (student budget)

and

(A.7) $A_{i,k} \leq V_{i,j,k}$, for all j constraints

in which

$V_{i,j,k}$ = the j^{th} award constraint for the i^{th} type of student aid to the k^{th} type of student

Several of the $V_{i,j,k}$ constraints can be specified:

(A.7a) $A_{i,k} \leq b_i \cdot (TC_k - \hat{PC}_k)$

(A.7b) $A_{i,k} \leq TF$

(A.7c) $A_{i,k} \leq A_{i,k}^*$

In the equations,

b_i = percent of unmet need to be funded in the i^{th} program

$\hat{PC}_k$ = expected parental contribution

$A_{i,k}^*$ = maximum dollar award to the k^{th} type of student in the i^{th} student aid program

Student Aid Budget Constraint

(A.8) $\sum_{k} A_{i,k} \cdot E_k \leq B_i$

where

B_i = total student aid budget for the i^{th} type of student aid

Assume that the applications constraint is not binding. Then, a Lagrangian can be formed in which the institution's objective function (A.1) is maximized subject to constraints (A.4) to (A.8):

$$
\begin{aligned}
\text{(A.9)} \qquad L = {} & U\,(E_k) \\
& + \lambda\,(E^* - \sum_k E_k) \\
& + \phi\,[(TF+G+I+P)\cdot \sum_k E_k - C \cdot \sum_k E_k] \\
& + \sum_k \Gamma\,(TC_k - \sum_i A_{i,k}) \\
& + \sum_{k}\sum_{i}\sum_{j} \pi_{i,j,k}\,[A_{i,k} - V_{i,j,k}] \\
& + \sum_i \Psi\,[\sum_k A_{i,k} \cdot E_k - B_i]
\end{aligned}
$$

Subject to the enrollment function given by (A.3), the first order conditions for a maximum are obtained when the partial derivatives of (A.9) are set equal to zero. In particular,

$$
\begin{aligned}
\text{(A.10)} \qquad \frac{\partial L}{\partial E_k} = \frac{\partial U}{\partial E_k} & + \lambda\,\frac{\partial \sum_k E_k}{\partial E_k} \\
& + \phi\,\frac{\partial TF}{\partial E_k} \cdot \sum_k E_k + TF \cdot \frac{\partial \sum_k E_k}{\partial E_k} \\
& + \phi\,\frac{\partial G}{\partial E_k} \cdot \sum_k E_k + G \cdot \frac{\partial \sum_k E_k}{\partial E_k} \\
& - \phi\,\frac{\partial C}{\partial E_k} \cdot \sum_k E_k + C \cdot \frac{\partial \sum_k E_k}{\partial E_k} \\
& + \sum_i \Psi\,[\sum_k A_{i,k}] \\
& = 0
\end{aligned}
$$

$$\text{(A.11)}\quad \frac{\partial L}{\partial A_{i,k}} = \frac{\partial U}{\partial E_k}\cdot\frac{\partial E_k}{\partial a_k}\cdot\frac{\partial a_k}{\partial A_{i,k}} + \lambda\,\frac{\partial \sum\limits_k E_k}{\partial\, E_k}\cdot\frac{\partial E_k}{\partial a_k}\cdot\frac{\partial a_k}{\partial A_{i,k}}$$

$$+\ \phi\left[\frac{\partial TF}{\partial E_k}\cdot\frac{\partial E_k}{\partial a_k}\cdot\frac{\partial a_k}{\partial A_{i,k}}\cdot\sum_k E_k + TF\cdot\frac{\partial \sum\limits_k E_k}{\partial\, E_k}\cdot\frac{\partial E_k}{\partial a_k}\cdot\frac{\partial a_k}{\partial A_{i,k}}\right]$$

$$+\ \phi\left[\frac{\partial G}{\partial E_k}\cdot\frac{\partial E_k}{\partial a_k}\cdot\frac{\partial a_k}{\partial A_{i,k}}\cdot\sum_k E_k + G\cdot\frac{\partial \sum\limits_k E_k}{\partial\, E_k}\cdot\frac{\partial E_k}{\partial a_k}\cdot\frac{\partial a_k}{\partial A_{i,k}}\right]$$

$$-\ \phi\left[\frac{\partial C}{\partial E_k}\cdot\frac{\partial E_k}{\partial a_k}\cdot\frac{\partial a_k}{\partial A_{i,k}}\cdot\sum_k E_k + C\cdot\frac{\partial \sum\limits_k E_k}{\partial\, E_k}\quad\frac{\partial E_k}{\partial a_k}\quad\frac{\partial a_k}{\partial A_{i,k}}\right]$$

$$+\ \Sigma\Gamma\ \frac{\partial \sum\limits_i A_{i,k}}{\partial\ A_{i,k}}$$

$$+\ \sum_k\sum_i\sum_j \pi_{i,j,k}$$

$$+\ \sum_i \Psi\left[\sum_k E_k + \sum_k A_{i,k}\cdot\frac{\partial E_k}{\partial a_k}\cdot\frac{\partial a_k}{\partial A_{i,k}}\right]$$

$$=0$$

Collecting terms in (A.10),

$$\text{(A.10a)}\quad \frac{\partial U}{\partial E_k}\qquad +\ \phi\left[\frac{\partial TF}{\partial E_k}\cdot\sum_k E_k + TF\cdot\frac{\partial \sum\limits_k E_k}{\partial\, E_k}\right]$$

$$+\ \phi\left[\frac{\partial G}{\partial E_k}\cdot\sum_k E_k + G\cdot\frac{\partial \sum\limits_k E_k}{\partial\, E_k}\right]$$

$$=$$

$$\phi\left[\frac{\partial C}{\partial E_k}\cdot\sum_k E_k + C\cdot\frac{\partial \sum\limits_k E_k}{\partial\, E_k}\right]$$

$$-\ \lambda\ \frac{\partial \sum\limits_k E_k}{\partial\, E_k}$$

$$-\ \sum_i \Psi \sum_k A_{i,k}$$

The first half of equation (A.10a) shows the marginal returns to the institution from the enrollment of an additional student with attribute k. The first term represents the non-money objectives (e.g., promoting equal educational opportunity, enhancing institutional prestige). To the extent that low income, minority, or highly talented students are admitted, one or more of these hypothesized objectives would be furthered.

The remaining two terms in the first part of (A.10a) reflect monetary returns to the institution. Where a larger enrollment enables the institution to increase tuition and fee charges, income from this source can be increased. In addition, the extra student brings the required stated tuition and fees with him or her. Similarly, since state and local government appropriations are often a function of FTE enrollments, the additional student enables the institution to increase its allotment from public funds.

The second half of equation (A.10a) refers to the marginal costs associated with the enrollment of an additional student with attribute k. In the first term, the marginal instructional expenses of the institution might be affected (increased or decreased). The second term represents the capacity constraint: the value of a space in the freshman class when there are no vacant seats. Finally, the additional student may impose a burden on the student aid budget.

In the shorter period of year to year admissions, institutions are assumed to behave as if they are attempting to balance marginal costs and marginal returns. Students with the greatest net marginal return (net of marginal costs) will be admitted first. Admissions of less desirable students will continue up to the point at which the net marginal return is zero.

When the terms in equation (A.11) are rearranged, the effects of student aid on the institutional enrollments can be deduced.

$$
\begin{aligned}
\text{(A.11a)}\quad & \frac{\partial U}{\partial E_k} \cdot \frac{\partial E_k}{\partial a_k} \cdot \frac{\partial a_k}{\partial A_{i,k}} + \phi \left[\frac{\partial TF}{\partial E_k} \cdot \frac{\partial E_k}{\partial a_k} \cdot \frac{\partial a_k}{\partial A_{i,k}} \cdot \sum_k E_k + TF \cdot \frac{\partial \sum_k E_k}{\partial E_k} \cdot \frac{\partial E_k}{\partial a_k} \cdot \frac{\partial a_k}{\partial A_{i,k}} \right] \\
& + \phi \left[\frac{\partial G}{\partial E_k} \cdot \frac{\partial E_k}{\partial a_k} \cdot \frac{\partial a_k}{\partial A_{i,k}} \cdot \sum_k E_k + G \cdot \frac{\partial \sum_k E_k}{\partial E_k} \cdot \frac{\partial E_k}{\partial a_k} \cdot \frac{\partial a_k}{\partial A_{i,k}} \right] \\
= \; & \phi \left[\frac{\partial C}{\partial E_k} \cdot \frac{\partial E_k}{\partial a_k} \cdot \frac{\partial a_k}{\partial A_{i,k}} \cdot \sum_k E_k + C \cdot \frac{\partial \sum_k E_k}{\partial E_k} \quad \frac{\partial E_k}{\partial a_k} \quad \frac{\partial a_k}{\partial A_{i,k}} \right] \\
& - \lambda \frac{\partial \sum_k E_k}{\partial E_k} \cdot \frac{\partial E_k}{\partial a_k} \cdot \frac{\partial a_k}{\partial A_{i,k}} \\
& - \sum_i \Psi \left[\sum_k E_k + \sum_k A_{i,k} \cdot \frac{\partial E_k}{\partial a_k} \cdot \frac{\partial a_k}{\partial A_{i,k}} \right] \\
& - \sum_k \Gamma \quad \frac{\partial \sum_i A_{i,k}}{\partial A_{i,k}} \\
& - \sum_k \sum_i \sum_j \pi_{i,j,k}
\end{aligned}
$$

As described above, the first half of equation (A.11a) represents the marginal returns to the institution. But, here the returns are from the award of an additional dollar of the ith type of student aid to the kth type of student. As the result of the increment to the award, enrollments of students with attribute k are hypothesized to increase with the accompanying contribution to both marginal returns and marginal costs. In this respect, equation (A.11a) replicates (A.10a), except for the added marginal costs associated with making the student aid award.

The new cost terms refer to the student aid award constraints. The second to the last term reflects the limit on student aid from all sources to the student's total costs of attendance. The last term represents the series of program restrictions that limit the amount of aid in any given program to a student with attribute k.

B. Determinants of Financial Aid Awards

Hypotheses about the distribution of different types of financial aid to different types of students can be deduced from the first order condition described by equation (A.11a).

Except for the program restrictions, the marginal costs of allocating an additional dollar of the ith type of student aid is the same for all k types of students.

The marginal returns, however, are hypothesized to differ by student type. First, certain types of students may contribute more toward the institution's non-money goals,

$$\text{(A.12)} \qquad \frac{\partial U}{\partial E_k} \geq \frac{\partial U}{\partial E_m}, \; k \neq m$$

Here, student type k might be low income, minority, or in-state while student type m could be high income, majority, or out-of-state.

Interacting with the institution's preference for certain types of students is the student's responsiveness to different forms of financial aid. In particular,

$$\text{(A.13)} \qquad \frac{\partial E_k}{\partial a_k} \cdot \frac{\partial a_k}{\partial A_{i,k}} \geq \frac{\partial E_m}{\partial a_m} \cdot \frac{\partial a_m}{\partial A_{i,m}}$$

where

(A.13a) $$\frac{\partial a_k}{\partial A_{i,k}} \geq \frac{\partial a_k}{\partial A_{h,k}} \quad , \ i \neq h$$

and

(A.13b) $$\frac{\partial a_k}{\partial A_{i,k}} \geq \frac{\partial a_m}{\partial A_{i,m}} \quad , \ k \neq m$$

Here, increases in enrollments of specific types of students in response to the aid award will differ by student type and aid type.

The institution must link these two influences together when packaging student aid. While increasing the numbers of low income students might be the desired goal, this type of student may be less responsive to small changes in the aid awards. Although increased numbers of high income students might not be a high priority, relatively small awards could be sufficient to trigger a large enrollment response.

The separate effects are difficult, if not impossible, to disentangle. Yet, the result of institutional evaluations of students and estimates of student response can be observed.

The other variables in (A.11a) reflect constraints on institutional behavior. Hence, these must be controlled in any study of the packaging of aid. In particular, the effects of instructional budgets, student aid budgets, and award constraints must be considered. These constraints, referred to above, are specified in the empirical estimates of Chapter IV.

CHAPTER IV

PACKAGING FINANCIAL AID TO 1972-73 FULL-TIME FRESHMEN

With the dramatic growth in student aid dollars over the last 10 years, the role of the postsecondary institution in allocating a large share of this aid to students has increased in importance. Since student decisions to enroll are likely influenced by the amounts and types of financial aid received, the financial aid policies and decisions of institutions are vital to the institutions as well as the students.

This chapter draws upon the institutional framework developed in Chapter III to explore the determinants of financial aid awards to students. The measurement of key student/family and institutional variables is discussed briefly in Section A below. Section B contains a detailed description of the types and amounts of financial aid awarded to different types of students. The explorations in this and the following two chapters are primarily intended to illustrate the importance of student/family and institutional variables in determining the types and amounts of financial aid received.

A. Measurement of the Variables

The tables in this chapter contain data taken from the 1972 National Longitudinal Study Base-Year and First follow-Up data file (NCES (1975)). and the College Board linked NLS-Institutional data base (Tenison (1976)). A description of how each variable was constructed is contained in an appendix to this report. The manipulations used to adjust for non-response and reporting errors for financial aid items are detailed in Chapter II.

For most of the analysis, we limit the study to an examination of aid awards to 1972-73 full-time freshmen. While this procedure ameliorates some of the missing data difficulties, as much as one-fifth of the sample contains no data for several of the student/family and institutional variables. Only cases with available data are included in the distribution; each table includes an estimate of the share of the unweighted sample excluded due to missing data.

1. Student/Family Variables

Three student and family characteristics are used to distinguish among students attending postsecondary institutions.

Family Income: Y_k. Low income students would be more likely to receive financial aid from institutions, and to receive larger amounts, if institutions are attempting to attract these students as a commitment to equal educational opportunity. Further, many programs -- particularly the Federal Office of Education student aid programs -- target aid on students from low income families. Among others, these two factors suggest that family income is likely to be a key determinant in the allocation of aid. The interval estimate provided by the NLS respondent (Base-Year item 89) is used as the measure of family income. The midpoint of the designated interval is taken to be an approximate point estimate of the family's income in 1972. For those providing income data in the Fall of 1973 on the Form B Follow-Up, these point estimates are deflated by 12 percent. Family income quartiles are established from the responses of all NLS sample members to Base-Year item 89.

Student Achievement/Ability: SAT_k. If institutions are attempting to attract the most able, motivated students, then high ability students (as measured by their SAT scores) would be more likely to receive aid, to receive grants, and to receive larger amounts of aid. Achievement/ability is gauged by an SAT-equivalent score. Actual test scores were reported by high school counselors on the student's School Record Information Form. ACT or NLS test book scores are converted to SAT-equivalent scores for cases with no SAT score.

Racial/Ethnic Group: R_k. Non-whites continue to lag behind whites in their rate of postsecondary enrollment. Equal educational opportunity goals would call for a higher percentage of aid recipients among minorities and more favorable aid packages -- relatively larger packages with more grants. The analyses below employ the student-identified racial/ethnic group (Base-Year item 83) to describe the allocation of aid to minorities. The eight categories are condensed to four: white, black, hispanic and other. The "other" category includes American Indian and Asian-American students.

2. Institution Variables

Ten institution variables are employed to examine the patterns of awarding and packaging student financial aid. These variables describe the characteristics of the student body, the sources of institutional revenue available for instructional purposes, and the amounts and types of student aid funds.

Median Family Income: Y_s. The income distribution of the student body differs among postsecondary institutions. To the extent that equal educational opportunity goals are being met through student aid, institutions with a lower median family income would tend to have a larger share of aid recipients who receive, on average, larger amounts of aid and more favorable packages. A measure of median family income at each postsecondary institution is calculated from data supplied to the Office of Education on the "Tripartite" application. Midpoints are taken as the approximate point estimates for each of the four income intervals and are weighted by full-time equivalent enrollments. The calculated 1973 median family income is then deflated to 1972 dollars by 12 percent.

Median Achievement/Ability: SAT_s. The academic quality of the student body also differs among institutions. The allocation of aid according to the academic capability of the student body can be used to examine the extent to which student aid is being used to attract the good academic prospects -- "the sure bets" -- to prestigious postsecondary institutions. The American Council on Education's Institutional Characteristics file includes the median SAT score of the enrolled freshman class, which will be used as a measure of academic quality. SAT-equivalents are computed for institutions with median ACT scores only. Institutions with neither SAT nor ACT scores are assumed to be non-selective, and assigned an SAT-equivalent of 374 (see Radner and Miller (1975)). Institutions are grouped according to median equivalent-SAT score by the categories developed in Radner and Miller (1975) and Froomkin (1975b).

Institution Racial Composition: R_s. Predominantly black institutions serve the very special needs of minority students. Using a flag variable indicating the predominant racial/ethnic composition of the student body, the differences in the allocation of financial aid between black institutions and other institutions can be explored. This variable is provided on the Higher Education Directory (HED) file (NCES (1974b)). For institutions not included in the HED file, the predominant race is assumed to be white.

Tuition Income: TF. Tuition charges represent the major source of discretionary income to the institution. That is tuition and fee rates are most easily changed to meet rising costs of instruction. Institutions which depend heavily upon tuition income might find it necessary to allocate greater amounts of student aid to a larger share of the entering full-time Freshman class. To examine this link, a measure of tuition dependence is constructed as the share of institutional resources available for instructional purposes (the instructional budget) funded through tuition and fees. The basic institutional revenue data are taken from the 1973 HEGIS *Financial Statistics* survey (NCES (1974c)). Note that institution-identified resources available primarily for research purposes or auxiliary enterprises are excluded from the instructional budget variable.

Government Revenue: G. In many institutions, subsidies from Federal, state, and local jurisdictions cover a large share of the instructional budget. While the institutions have little control over the amount of the subsidies, their receipt enables lower tuition charges to students and generally means smaller amounts of aid to fewer members of the entering full-time freshman class. A measure of dependence on government revenue has been constructed as the share of revenues available for instructional purposes met by government subsidies. All institutional financial data are taken from the HEGIS *Financial Characteristics* survey (NCES (1974c)).

Gift and Endowment Income: P&I. Income from private gifts, bequests, and endowments generally represents the smallest, yet most discretionary, source of revenue to the institution. Where relatively large amounts of income from this source are necessary to meet the instructional budget, institutions are less able to allocate these funds to student aid. Of course, to the extent that this revenue retards the growth in direct student tuition charges, relatively smaller amounts of student assistance to fewer students will be necessary. This association is examined with a measure of dependence on gift and endowment income. Calculated as the share of institutional revenues available for instructional purposes funded through gifts and endowments, this variable is constructed from data provided in the HEGIS *Financial Characteristics* survey (NCES (1974c)).

Discretionary Institutional Student Aid Funds: B_1. The institution's total amount of discretionary aid may serve to limit the amount of aid and packaging of aid to students. The institutional funds contribute directly to the total amount of aid available and also may be used to meet program matching requirements. A measure of discretionary institutional student aid is taken directly from the institution's "Tripartite" application for campus-based aid (USOE (1972)). Where no institutional aid data are present, the amount of student aid grant expenditures from the HEGIS *Financial Characteristics* survey (NCES (1974c)) plus the institution's share of NDSL disbursements from the "Tripartite" form (USOE (1972)) are used instead. The weighted undergraduate full-time equivalent enrollment at the institution was used to convert total funds to a per student basis.

Federal Student Aid Funds: B_2, B_3, B_4. Of interest in this study are the effects of the campus-based Federal student assistance programs. Taken from the Tripartite application (USOE (1972)), allocations of College Work-Study (B_2), Initial-Year Educational Opportunity Grants (B_3), and National Direct Student Loans (B_4) are examined separately. The weighted undergraduate full-time equivalent enrollment was used to convert the funds to a per student basis. In 1972, the EOG program provided the only Federal Office of Education need-based grants. Further, the matching requirements in the EOG program were the most restrictive of all campus-based programs. For both reasons, the effects of EOG funding on the allocation and packaging of student aid will be of particular interest.

B. Distribution of Financial Aid to 1972-73 Entering Full-Time Freshmen

Postsecondary institutions package student assistance subject to a number of influencing student, family, and institutional characteristics. The descriptive data which follow portray the allocation of student aid in several ways. Initially, we compare the probabilities of receiving aid (and each type of aid -- grant, work, loan, or benefit) associated with each student or institution attribute. Based on the number of respondents reporting each type of aid, we search for patterns in the mean amounts received among the recipient groups.

In subsequent sections, we consider variations in the packaging of different types of aid to particular student and institution groups. Distribution of single-type and multiple-type aid packages are compared across these groups. Finally, we examine the distribution and packaging of Federal aid. The data reveal important differences in the probability of receiving some type of Federal aid in the aid package, solely or combined with non-Federal aid. Beyond this, differences in the average amount of Federal dollars included in typical packages for various student and institutional groups are explored.

In summary, student and institution attributes appear to have been associated with the distribution of student aid in 1972-73. The patterns are generally consistent with three underlying factors hypothesized to influence the distribution of student aid. These factors are: providing aid to disadvantaged students as a means of approaching equal educational opportunity; providing aid on the basis of student financial need; and, providing aid on the basis of institutional student aid efforts.

In particular, disadvantaged students -- those from low income or minority backgrounds -- tended to be favored in the allocation of aid. These students were more likely to receive all types of aid and a greater total amount of aid. Disadvantaged students were also most likely to receive a package with more than one type of aid, to receive Federal aid, and to receive larger amounts of Federal aid (specifically, Federal grant and College Work-Study funds).

Of special interest was the finding that, after controlling for institution type and control, differences across achievement/ability groups in the probability of receiving most types of aid and in the amount of aid disappear. Much of the observed differences in packaging and in the distribution of Federal aid among the student academic aptitude groups was accounted for by differences in students costs and available resources.

Second, the distribution of student aid according to institution characteristics tend to underline the role of "financial need" -- defined as costs of attendance less expected family contribution. The full-time freshmen enrolled at institutions relying on private tuitions were most likely to receive aid (particularly grants and loans), to receive more than one type of student aid, and to receive Federal aid (particularly combined with aid from non-Federal sources). They also tended to report larger amounts of each type of aid.

Finally, the availability of student aid funds at the institution appeared to be positively associated with the likelihood of receiving aid (and, to some extent, Federal aid), but the differences were not very great. Since institutional funds were necessary to meet matching requirements, some association is to be expected. The apparent weak association might be accounted for by the relatively large share of funds available through non-institutional channels in 1972-73 (such as Federally Insured Student Loans, Social Security benefits, and off-campus part-time work).

1. The Distribution of Different Types of Student Aid by Student/Family Attributes

All three student/family attributes appear to be associated with the receipt and amounts of grants and scholarships, job earnings, loans, and transfer income benefits.

Family Income. Almost all higher education demand and enrollment studies have identified family income as a significant determinant of the enrollment and choice decisions of students. Research results from a number of studies (EPRC (1975a); Atelsek and Gomberg (1975)) reveal that aid from particular Federal and state programs appears to be targeted on the lowest income groups. While this general pattern is consistent with the distribution of aid among NLS respondents, several of the most interesting and useful detailed comparisons should be mentioned.

First, although students from the lowest income quartile were more likely to receive each type of aid, the average amounts of aid to recipients exhibited a mixed pattern according to the type of aid received. As the entries in Table IV-1 indicate, 76.7% of low income students reported receiving support from a non-family source. For high income students, the comparable recipient share is 34.9%. According to these NLS respondents, low income students were three times as likely to receive grants and loans, and five times as likely to receive benefits from Federal transfer income programs as their high income peers. The difference in shares of students reporting earnings from a term-time job is less, but still pronounced -- 30.6% of low income students compared to 15.5% of high income students.

Only in the average amount received from all types of aid did lower income recipients report larger sums than aided students from higher income families. The average loan to high income borrowers of $1,156 was over $300 larger than the average $805 received by low income borrowers. The mean difference among recipients of transfer income benefits measured about $250, based on average amounts of $1,105 and $787 for high income and low income beneficiaries, respectively. Although low income grant recipients recorded the largest average amount of grant aid, it is interesting to note that the average grant of $833 for the highest income quartile was greater than the average $769 grant for the lower middle income quartile._/

_/These comparisons are not statistically significant since the averages conceal a great deal of the variation in the reported amounts. In most instances, the standard deviations are nearly equal to the calculated means; the variation is not greatly reduced with income partitioning.

TABLE IV-1

Financial Aid Received by 1972-73 Entering Full-Time Freshmen by Type of Aid and Family Income

TYPE OF AID	FAMILY INCOME QUARTILES[a]				
	All Students	Low	Lower Middle	Upper Middle	High
TOTAL AID					
Average Amount to Aid Recipients[b]	$1,084 (935)	$1,267 (946)	$1,083 (980)	$1,051 (865)	$ 945 (935)
Percent Receiving	54.5%	76.7%	67.6%	55.4%	34.9%
GRANT					
Average Amount to Grant Recipients[b]	$ 789 (793)	$ 872 (816)	$ 769 (852)	$ 711 (661)	$ 833 (895)
Percent Receiving	32.3%	52.4%	42.2%	32.5%	17.6%
WORK					
Average Amount to Job Holders[b]	$ 424 (421)	$ 475 (398)	$ 405 (423)	$ 415 (416)	$ 402 (437)
Percent Receiving	22.4%	30.6%	27.9%	23.4%	15.5%
LOAN					
Average Amount to Loan Recipients[b]	$ 950 (575)	$ 805 (492)	$ 904 (570)	$1,071 (566)	$1,156 (664)
Percent Receiving	20.3%	34.6%	28.3%	20.5%	8.6%
BENEFIT					
Average Amount to Beneficiaries[b]	$ 854 (732)	$ 787 (676)	$ 726 (549)	$ 915 (673)	$1,105 (1,023)
Percent Receiving	5.1%	11.6%	5.4%	3.8%	1.9%

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[a] Income quartiles calculated from student-reported income interval estimates: Low = less than $7,500; Lower Middle = $7,500 to $10,500; Upper Middle = $10,500 to $15,000; High = Over $15,000. Calculated percents exclude students for whom no income estimate is available (approximately 18%).

[b] Average amounts calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

Several factors can account for this mixed pattern among income groups in the average amount of aid received. First, specific program limitations on the maximum award levels might restrict the amount received from each type (or source) for low income students._/ This would also be true if institutions packaged several types of aid in meeting a student's need. Second, some programs do not employ need-based allocation criteria. This is particularly true in the transfer income programs, such as Social Security, in which benefits are based on the past earnings of the deceased or disabled worker. Among Social Security beneficiaries, those from higher income families would likely receive larger average benefits. Finally, the many student aid programs which base eligibility for and amounts of awards on "need" are sensitive to student costs of attendance as well as family income. To the extent that higher income students are more likely to attend higher cost institutions, the average "need" -- defined as student costs of attendance less expected family contribution -- might be more nearly the same across income groups.

The receipt and average amount of aid within a given income quartile do appear to have been influenced by the type and control of the institution attended._/ Universally, within each income group, students attending private four-year colleges were more likely to report receiving aid than students enrolled at other types of institutions. For example, while slightly over three-fourths of all low income students reported receiving some form of financial aid, nearly 90% of the low income students at private colleges identified themselves as aid recipients. Similarly, over two-fifths of the high income students enrolled at private colleges reported receiving financial aid compared to a 35.0% recipient share for all high income students. The pattern was repeated for every type of aid (although the differences are not as

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_/For example, EOG awards and Guaranteed Student Loans could not exceed $1,000 and College Work-Study jobs were limited to 20 hours per week in the 1972-73 academic year.

_/The data are presented in the appendices, Table A-1 to A-5 and B-1 to B-5.

marked for job holders or loan recipients).

Further, after controlling for income, aid recipients at private colleges tended to report the largest amounts for each type of aid. For example, while average total aid ranged from $1,267 for low income aid recipients to $945 for high income aid recipients, the comparable average aid reported by low and high income recipients attending private colleges was $2,234 and $1,370, respectively. A similar pattern emerged for recipients of grants and scholarships.

Of all types of aid, the receipt of term-time earnings and benefits within each income group appears to be least influenced by the type and control of the institution attended. That is, 1972-73 low income students at private four-year colleges were almost twice as likely to receive grants and over three times as likely to receive loans as low income students at public two-year colleges. However, low income students were about equally likely to receive transfer income benefits and only slightly more likely to report earnings from a term-time job if enrolled at a private four-year college as opposed to a public two-year institution.[/] Within each income quartile, the differences in average amounts of earnings and benefits according to type of institution were less pronounced as well. For example, the earnings reported by job holders average about $500 in the low income group, regardless of where the student worker was enrolled.

The observed patterns are generally consistent with several complementary explanations reported elsewhere. First, as mentioned above, the relatively larger costs of attendance of private colleges translate into greater need

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[/] A similar narrowing of recipient shares for job holders and beneficiaries compared to grant and loan recipients occur among high income students.

for students at these institutions. Coupled with this, the relatively better staffed financial aid offices and better funded institutional aid programs at private colleges can account for the larger shares of recipients. Second, the greater costs of attendance at private colleges require greater amounts (and, to some extent, more types) of student aid. Allocating grant and loan aid to meet the higher tuition charges would then also be consistent with the observed distribution. Finally, students are probably less dependent on financial aid offices for work opportunities and transfer income benefits. Hence, differences in financial aid staff among the institutional sectors should have a smaller impact on the distribution of term-time earnings and benefits._/

Finally, in the non-collegiate sector, the observed patterns are somewhat different. Across all income groups, students at vocational schools were among the least likely to receive any type of aid._/ Students attending proprietary schools appeared to fare quite well in receipt of aid. After students enrolled at private colleges, students at proprietary schools were among those most likely to receive some type of financial aid. These students rated an equal chance of receiving earnings and loan funds as their relatively lower income peers, and stood a better chance to receive this aid than did their relatively high income peers, at public four-year institutions.

Average amounts of aid to recipients at proprietary schools varied little across income quartiles. In terms of total aid, proprietary school recipients reported, on average, over $1,000 in aid. Proprietary school

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_/See Gladieux (1975) for a discussion of this point. Further, he finds that public two-year colleges are more likely to participate in the Federal College Work-Study program than in the other campus-based student aid programs.

_/ The exceptions are: (1) high income vocational students receiving most types of aid; and (2), low income students reporting benefits, accounting for 11.9% of vocational students.

borrowers also averaged over $1,000 in each income quartile. In general, the receipt and average amounts of financial aid to proprietary students appear to have varied the least of all institution types across income quartiles.

Student Achievement/Ability. Much has been written about evaluating the effects of allocating public funds to subsidize students. Some have argued that aid awards should be made to the most able, motivated students (as measured by SAT score) to maximize the results of spending public student aid funds (see Merrett (1967)). Others have contended that aid should be directed to the less able students who may experience relatively high rates of return to postsecondary training (Rivlin (1970)). Many have assumed that the current emphasis on need-based aid diverts student aid funds from less needy, able students, but the available evidence contradicts the general assumption. The Cartter Panel on Student Financial Need Analysis (College Entrance Examination Board (1971)) reported in the results of a study of 1969-70 students that:

> "...average total aid per enrolled student increased $78 for every 100 point increase in average Scholastic Aptitude Test (SAT) scores..."

A more recent study of 1972-73 freshman financial aid applicants found that student aid is disproportionately offered to the most able students (Jones (1975)). The responses of 1972-73 entering full-time freshmen in the NLS survey, summarized in Table IV-2, generally mirror these research results. But, important differences do emerge.

Most notably, the highest achievement/ability students were most likely to receive some form of financial aid, and particularly to receive grant aid. The 61.6% share of aid recipients in the highest achievement/ability group was one-fifth larger than the share of aid recipients in the lower

TABLE IV-2

Financial Aid Received by 1972-73 Entering Full-Time Freshmen by Type of Aid and Student Achievement/Ability

TYPE OF AID	STUDENT ACHIEVEMENT/ABILITY GROUPS[a]				
	All Students	Low	Lower Middle	Upper Middle	High
TOTAL AID					
Average Amount to Aid Recipients[b]	$1,084 (935)	$ 962 (813)	$1,099 (888)	$1,150 (1,024)	$1,288 (1,091)
Precent Receiving	54.0%	52.8%	52.2%	52.2%	61.6%
GRANT					
Average Amount to Grant Recipients[b]	$ 789 (793)	$ 679 (624)	$ 777 (769)	$ 768 (877)	$ 982 (910)
Percent Receiving	32.3%	25.6%	31.2%	36.3%	46.7%
WORK					
Average Amount to Job Holders[b]	$ 424 (421)	$ 450 (455)	$ 408 (356)	$ 430 (429)	$ 371 (368)
Percent Receiving	22.4%	24.4%	20.6%	20.1%	21.9%
LOAN					
Average Amount to Loan Recipients[b]	$ 950 (575)	$ 921 (506)	$ 980 (569)	$ 968 (562)	$ 957 (711)
Percent Receiving	20.3%	19.0%	22.1%	19.8%	22.7%
BENEFIT					
Average Amount to Beneficiaries[b]	$ 854 (732)	$ 833 (762)	$ 676 (481)	$ 998 (764)	$1,042 (855)
Percent Receiving	5.1%	5.9%	5.1%	4.3%	3.4%

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[a] Students are grouped according to SAT-equivalent score: Low = less than 800; Lower Middle = 800 to 950; Upper Middle = 950 to 1,100; High = Over 1,100. Calculated percents exclude students for whom no SAT-equivalent score is available (approximately 2%).

[b] Average amounts calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

achievement/ability groups. The highest achievement/ability students were almost twice as likely to receive grants as their lowest achievement/ability peers. Average total aid reported by recipients in the highest achievement/ability group also exceed the comparable measure for lowest achievement/ability students -- $1,288 compared to $962. High achievement/ability grant recipients reported an award of $982, again an amount greater than the $679 sum reported by grant recipients in the lowest group. This pattern disappeared for student workers and student borrowers, where the recipient shares and average amounts received were virtually the same across achievement/ability groups.

Significantly, the distribution of students among postsecondary institutions again accounted for much of the observed pattern of slightly larger recipient shares and average awards in the high achievement/ability group._/ Within each institutional sector, low and high ability students were about equally likely to receive aid from a non-family source. In particular, about 65% of private four-year college full-time freshmen in each achievement/ability group reported receiving aid. Comparable figures for public four-year and public two-year full-time freshmen are 55% and 45%, respectively. Since students attending private four-year colleges formed a relatively larger share of the high achievement/ability group, a larger share of aid students receiving larger average amounts of aid in that group appeared._/

Therefore, the likelihood of receiving aid appeared to be more influenced by the type of institution attended than by student achievement/ability. Higher ability students enrolled in high cost institutions would demonstrate a greater need for aid and also benefit from a better-staffed institutional student aid offices and better-funded institutional student aid programs.

_/The distributions by institutional sector are included in the appendices, Table A-6 to A-10 and B-6 to B-10

_/The increase in private four-year college representation is marked, ranging from 13% of the low achievement/ability group to 36% of the highest group.

Differences in these institutional factors were probably most important in accounting for the distribution of total aid, and particularly grants and scholarships. They would be less important in the allocation of earnings from part-time jobs or loans. Consistent with this hypothesis, the probability of receiving support from a term-time job was quite similar within achievement/ability groups, regardless of the type of institution attended.[1] However, full-time freshmen at private four-year colleges were about twice as likely to report grants as their equal ability peers at public two-year colleges.

Racial/Ethnic Group. Census and BLS data continue to show that postsecondary enrollment rates for minorities are less than for majority students. (U.S. Bureau of Labor Statistics (1974); U.S. Bureau of the Census (1976)). The more recent evidence seems to suggest that these differences are primarily associated with income rather than *de facto* social barriers. It is evidently now a fact that black and white high school graduates from low income families are equally likely to attend college the next fall. But, the majority of black high school graduates come from low income families. This concentration means that the overall enrollment rate for blacks and other minorities lags behind the rate for majority students. Again, most recent student surveys tend to show that minorities are more likely to receive financial aid -- and in larger amounts -- than majority students. Among NLS respondents, the receipt and amount of aid appeared to be influenced by the type of institution attended as well.

Generally, minorities were more likely to receive any type of financial aid than majority full-time freshmen. An estimated 69.6% of blacks and 68.6% of hispanic students reported receiving some aid, compared to a 52.2% recipient share among majority students. The data presented in Table IV-3 reveal that this pattern was repeated among the different types of student aid. However, the minorities appeared to be relatively more likely to receive aid generally available from non-institutional sources. For example, while blacks were about one-third more likely to report receiving grants, they were almost twice as likely to have received a loan as their white peers (37.3% compared to 18.8%). For most types of aid, minorities enrolled at public four-year institutions were relatively more likely to report receiving support than majority students. In particular, the 33% share of minority public four-year student workers and the 39% share of minority public four-year student borrowers were about twice the shares of majority public four-year workers and borrowers. Within each racial/ethnic group, however, full-time freshmen attending private four-year colleges were more likely to receive each type of aid.

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[1] About a quarter of low achievement/ability students reported term-time earnings of $400 to $500 within each institutional sector. The share of workers in the high ability group measured 15 to 25 percent, with average earnings of $250 to $350.

Minority recipients reported the largest amounts of total aid and grants. As evidenced in Table IV-3, the $1,379 average total aid reported by blacks was over $300 greater than the average $1,052 in aid to white students. The mean difference measured about $350 among grant recipients, based on average grants of $1,092 to blacks and $744 to white students. Average amounts of other types of aid to blacks were more nearly equal to (or less than) the average amounts reported by white students. While the average amounts received within all institutional sectors mirrored the overall pattern, the relative differences among private four-year college freshmen were more pronounced. For example, the average grant received by black freshmen was 46 percent greater than the average reported by white grant recipients; among private four-year college grant recipients, the difference in average awards between the two racial/ethnic groups increased to 62 percent.

TABLE IV-3

Financial Aid Received by 1972-73 Entering Full-time Freshmen by Type of Aid and Racial/Ethnic Group

TYPE OF AID	RACIAL/ETHNIC GROUP[a]				
	All Students	White	Black	Hispanic	Other
TOTAL AID					
Average Amount to Aid Recipients[b]	$1,084 (935)	$1,052 (915)	$1,379 (996)	$1,108 (823)	$1,272 (1,225)
Percent Receiving	54.0%	52.2%	69.6%	68.6%	58.2%
GRANT					
Average Amount to Grant Recipients[b]	$ 789 (793)	$ 744 (750)	$1,092 (942)	$ 851 (768)	$1,102 (1,144)
Percent Receiving	32.3%	31.1%	41.4%	42.9%	38.3%
WORK					
Average Amount to Job Holders[b]	$ 424 (421)	$ 417 (415)	$ 497 (392)	$ 333 (248)	$ 519 (638)
Percent Receiving	22.4%	21.4%	32.2%	26.5%	26.7%
LOAN					
Average Amount to Loan Recipients[b]	$ 950 (575)	$ 977 (588)	$ 825 (485)	$ 877 (533)	$ 918 (598)
Percent Receiving	20.3%	18.8%	37.3%	28.5%	18.5%
BENEFIT					
Average Amount to Beneficiaries[b]	$ 854 (732)	$ 900 (766)	$ 615 (500)	$ 762 (475)	$ 440 (264)
Percent Receiving	5.1%	5.0%	6.3%	7.4%	2.1%

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[a] Students are grouped according to self-identified racial/ethnic category. Other category includes American Indian and Asian-American students. Calculated percents exclude students for whom no racial/ethnic identification is available (approximately 2%).

[b] Average amounts calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

It is interesting to note that for full-time freshmen attending proprietary schools, the probability of receiving most types of aid did not vary substantially across the racial/ethnic groups. Only among loan recipients, where blacks were over one-third more likely to borrow, did the recipient shares differ. Average amounts of aid reported for each aid type are also quite similar among the racial/ethnic groups.

Since minority students tend to come from low income families, it should not be surprising that the comparisons just presented mirror the observed allocation of aid by family income. But, although minorities tended to fare better than majority students in receiving aid, sizeable differences in the shares of recipients and average amounts of aid received are evidenced according to the type and control of the institution attended (see appendix tables A-11 to A-15 and B-11 to B-15).

2. Distribution of Different Types of Student Aid by Institutional Attributes

Institutions differ in the types of students they serve and in the methods of financing their instructional costs. In the former instance, these differences emerge among the same attributes discussed above: median family income, median student achievement/ability, and predominant racial group at the institution. Institutions differ in methods of financing primarily in the amounts of instructional costs supported through public institutional subsidies as opposed to private student tuitions or endowment and gift incomes. Finally, institutional packaging of student aid is enhanced with the availability of funds earmarked for this purpose. All these variables can affect the allocation of student aid among different types of students.

Median Family Income of Students. Because of geographic location, academic and vocational offerings, or individual preference, some institutions tend to enroll students from relatively lower (or relatively higher) income families. In Table IV-4, NLS respondents have been grouped according to the median family income of the postsecondary institution they attended. These groups reflected quite different types of institutions. Seventy-five percent of the "low income" group, for example, were enrolled at public institutions (nearly one-half attending public two-year institutions). The "upper middle income" group was almost entirely composed of equal shares from public four-year and private four-year institutions (see weighted counts in Appendix A, Table A-16).

It appears that, with the exception of grants and loans, students attending "low income" institutions were slightly more likely to receive each type of aid. This pattern is even more pronounced within institutional sectors. For example, while 58.0% of students attending "low income" institutions and 55.3% of those enrolled at "upper middle income" institutions reported receiving some form of student aid, the corresponding shares among private four-year college students were 74.1% and 60.1%. In fact, within each institutional sector, students in the "low income" institutions were more likely to receive a grant or scholarship than students in the "upper middle income" institutions. The larger share of grant recipients in the "upper middle income" institutions shown in Table IV-4 actually reflected the greater likelihood of students at private colleges to receive all types of aid, regardless of the median family income at the postsecondary institution (see appendix tables A-16 to A-20).

With the exception of workers, aid recipients enrolled at institutions with relatively higher median family incomes reported larger amounts of each type of aid. This pattern is repeated within each institutional sector. The differences in mean amounts reported were not very great, except among grant and scholarship recipients. For these students, an average difference of $50 to $200

TABLE IV-4

Financial Aid Received by 1972-73 Entering Full-Time Freshmen by Type of Aid and Median Family Income at Postsecondary Institution

TYPE OF AID	MEDIAN FAMILY INCOME QUARTILES[a]				
	All Students	Low	Lower Middle	Upper Middle	High
TOTAL AID					
Average Amount to Aid Recipients[b]	$1,084 (935)	$ 920 (726)	$1,013 (867)	$1,470 (1,090)	
Percent Receiving	54.0%	58.0%	53.6%	55.3%	
GRANT					
Average Amount to Grant Recipients[b]	$ 789 (793)	$ 579 (539)	$ 698 (622)	$1,092 (947)	
Percent Receiving	32.3%	29.9%	32.5%	40.5%	
WORK					
Average Amount to Job Holders[b]	$ 424 (421)	$ 470 (370)	$ 414 (423)	$ 389 (390)	
Percent Receiving	22.4%	27.5%	22.9%	19.5%	
LOAN					
Average Amount to Loan Recipients[b]	$ 950 (575)	$ 903 (557)	$ 902 (540)	$1,000 (645)	
Percent Receiving	20.3%	20.3%	19.6%	25.8%	
BENEFIT					
Average Amount to Beneficiaries[b]	$ 854 (732)	$ 796 (744)	$ 826 (768)	$ 909 (702)	
Percent Receiving	5.1%	6.0%	5.3%	3.9%	

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[a] Students are grouped according to median family income at the institution attended: Low = less than $7,500; Lower Middle = $7,500 to 10,500; Upper Middle = $10,500 to $15,000; High = Over $15,000. Calculated percents exclude students for whom no median family income estimate is available (approximately 22%).

[b] Average amounts calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

within each sector appears to be even greater because of the high proportion of private college recipients in the "upper middle income" group.

Again, it is interesting to note that recipient shares and average amounts received tend to vary the least among proprietary school students. In part, this could reflect the relatively high use of loans, which differ the least in amount for most types of aid recipients.

Median Freshmen Achievement/Ability Score at the Postsecondary Institution. Institutions can ration their available seats through admissions policies by establishing minimum acceptable SAT scores. Beyond this and similar non-price criteria, institutions can ration places through a pricing policy that calls for awarding larger, more attractive packages of financial aid to the best student prospects. Data provided by NLS respondents suggest that the admissions and pricing policies were complementary: institutions enrolling the most able, motivated students also aided larger shares of students with larger amounts of more attractive types of aid. This conclusion emerges from an examination of the distribution of student aid according to the institution-reported median SAT score of the enrolled freshmen class, shown in Table IV-5.

While the recipient shares and average amounts reported by students attending the low ability, non-selective institutions appear to contradict the pattern described above, it should be noted that over half of these students were enrolled in proprietary and vocational schools. These were relatively low income students attending somewhat higher cost institutions where for many, financial aid was not an inducement to enroll; it was, rather, a necessity to remain.

Among NLS full-time freshmen enrolled at primarily collegiate institutions, those attending highly selective institutions were more likely to receive some aid -- particularly grants and loans -- and to report receiving larger average

TABLE IV-5

Financial Aid Received by 1972-73 Entering Full-Time Freshmen by Type of Aid and Median Freshman Achievement Ability Score at Postsecondary Institution

TYPE OF AID	MEDIAN FRESHMAN ACHIEVEMENT/ABILITY GROUPS[a]				
	All Students	Low	Lower Middle	Upper Middle	High
TOTAL AID					
Average Amount to Aid Recipients[b]	$1,084 (935)	$1,029 (770)	$ 817 (756)	$1,176 (885)	$1,616 (1,346)
Percent Receiving	54.0%	54.3%	51.4%	54.2%	62.2%
GRANT					
Average Amount to Grant Recipients[b]	$ 789 (793)	$ 628 (546)	$ 565 (499)	$ 802 (681)	$1,295 (1,284
Percent Receiving	32.3%	22.6%	27.3%	37.3%	47.0%
WORK					
Average Amount to Job Holders[b]	$ 424 (421)	$ 486 (452)	$ 409 (410)	$ 436 (442)	$ 369 (330)
Percent Receiving	22.4%	22.0%	24.8%	20.7%	20.8%
LOAN					
Average Amount to Loan Recipients[b]	$ 950 (575)	$1,119 (569)	$ 891 (559)	$ 910 (520)	$ 942 (689)
Percent Receiving	20.3%	23.0%	13.2%	22.8%	31.0%
BENEFIT					
Average Amount to Beneficiaries[b]	$ 854 (732)	$ 859 (642)	$ 759 (650)	$ 999 (914)	$ 866 (509)
Percent Receiving	5.1%	6.0%	6.2%	4.1%	3.3%

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[a] Students are grouped according to the institution-reported median Freshman SAT score. Low = less than 800; Lower Middle = 800 to 950; Upper Middle = 950 to 1,100. Calculated percents include students for whom no median SAT score is available. These students are assumed to be enrolled at non-selective institutions and are assigned an institution SAT score of 374 (see Radner and Miller (1975)).

[b] Average amounts calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

amounts of this aid than their fellow students. As the entries in Table IV-5 indicate, about 62.2% of the freshmen at highly selective institutions received an average $1,616 in total aid compared to a 51.4% share of the freshmen attending institutions with slightly below average selectivity who reported an average $817 in total aid. The distribution of grant aid according to institution selectivity was quite similar. On the other hand, students attending institutions with slightly below average selectivity were more likely to have received earnings from a term-time job or benefits from an income transfer program, although the calculated differences in mean amounts among institutional selectivity groups were not very great.

In large measure, these patterns reflect the distribution of students among different institution types. Over one-half of the students enrolled in highly selective institutions were attending high cost, private colleges. Even with their slightly higher family incomes, these students are more likely to have demonstrated need. Further, the highly selective institutions were most likely to be participating in Federal aid programs and to be distributing their own institutional funds.

Within institutional sectors, the pattern was generally repeated (see appendix Tables A-21 to A-25). Among students attending private four-year colleges, those enrolled at highly selective institutions were more likely to receive grants or loans, and in larger amounts, than those at less selective institutions. For example, 52% of full-time freshmen at highly selective private four-year colleges received a grant or scholarship averaging $1,558. Their fellow students at the least selective private four-year colleges were about one-fourth less likely to receive a grant. Those receiving this type of aid recorded, on average, $1,018 in support. The differences within the other institutional sectors, however, are much less pronounced. Public four-year college students were about equally likely to receive each type of aid, regardless of the selectivity of the institution. Only the average amount of grant aid reported by recipients tended to be larger in the higher selectivity categories for public four-year college students.

Institution Race. Historically, something less than 150 institutions of higher education have provided training primarily for black students choosing to continue their education beyond high school. An estimated one-third of all full-time black freshmen enrolled in these institutions in 1972-73.[_/] Based on the responses of NLS freshmen attending the black colleges, their special financial needs were apparently recognized and at least partly met with relatively more student aid.

Full-time freshmen enrolled at black colleges were more likely to receive all types of aid than freshmen not at black colleges. From Table IV-6, 68.4% of the freshmen at black colleges, as compared to 53.8% of freshmen attending other colleges, received aid. The black college students were almost twice as likely to borrow: 38.6% reported receiving a loan compared to a 20% borrower share among other students.

Average aid received also tended to be greater among those attending predominantly black institutions, measuring $1,240 as compared to $1,084 for all aid recipients. It appears that most of this difference can be attributed to the packaging of several types of aid at predominantly black institutions, since the average amounts of each type of aid generally were less for all except term-time earnings.

Institutional Financing Sources. Postsecondary institutions differ in their reliance on tuition income, government subsidies, and private gifts and endowment income to meet the costs of providing instruction for students.

[_/] But, see Wong (1976) for a discussion of alternative definitions of black institutions.

TABLE IV-6

Financial Aid Received by 1972-73 Entering Full-Time Freshmen by Type of Aid and Institution Race

TYPE OF AID	INSTITUTION RACE[a] All Students	 Predominantly White	 Predominantly Black
TOTAL AID			
Average Amount to Aid Recipients[b]	$1,084 (935)	$1,082 (938)	$1,240 (734)
Percent Receiving	54.0%	53.8%	68.4%
GRANT			
Average Amount to Grant Recipients[b]	$ 789 (793)	$ 789 (797)	$ 806 (550)
Percent Receiving	32.3%	32.2%	41.4%
WORK			
Average Amount to Job Holders[b]	$ 424 (421)	$ 423 (423)	$ 481 (277)
Percent Receiving	22.4%	22.2%	36.6%
LOAN			
Average Amount to Loan Recipients[b]	$ 950 (575)	$ 954 (577)	$ 781 (458)
Percent Receiving	20.3%	20.0%	38.6%
BENEFIT			
Average Amount to Beneficiaries[b]	$ 854 (732)	$ 857 (736)	$ 616 (360)
Percent Receiving	5.1%	5.1%	6.0%

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[a] Students are grouped according to the institution-reported predominant racial/ethnic composition of the student body. Students for whom no institution race identification is available are included in the predominantly white summaries.

[b] Average amounts calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

These differences in financing are likely to be important because the need for student aid funds might be influenced by the method of institutional financing. For example, institutions with relatively high tuitions may require more, and necessarily higher, student aid awards. Alternatively, institutions with relatively large public institutional subsidies and below-cost tuition charges might require and use relatively much smaller amounts of student aid. These comparison really reflect differences in student costs of attendance introduced through the alternate financing sources. The differences are often approximated by a shorthand type and control classification (public/private, four-year/two-year), but it is the financing characteristics which give rise to the underlying pattern of cost attendance._/

In Tables IV-7, IV-8, and IV-9, students are grouped according to the dependence on the three major revenue sources at the institution they attended. The patterns which emerge are quite consistent with the tuition revenue - high cost description provided above. From Table IV-7, the full-time freshmen attending institutions relying on tuition income were more likely to receive some aid (61.4%), grant aid (41.7%), and a loan (31.6%). Alternatively, the NLS full-time freshmen enrolled at institutions receiving over 60 percent of their instructional budget from public subsidies (shown in the last column of Table IV-8) were least likely to have received any

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_/In attempting to distinguish among collegiate institutions, Smith and Henderson [1976] described the importance of five financial characteristics. According to their analyses, tuition, endowment, and private gift income tended to characterize groups of private institutions, while the level of government appropriations was most important in identifying public institutions.

TABLE IV-7

Financial Aid Received by 1972-73 Entering Full-Time Freshmen by Type of Aid and Institution Tuition Dependence

TYPE OF AID	TUITION AS SHARE OF INSTRUCTIONAL BUDGET[a]			
	All Students	Up to 20 Percent	20 to 60 Percent	Over 60 Percent
TOTAL AID				
Average Amount to Aid Recipients[b]	$1,084 (935)	$ 776 (796)	$ 965 (835)	$1,535 (1,050)
Percent Receiving	54.0%	46.7%	54.6%	61.4%
GRANT				
Average Amount to Grant Recipients[b]	$ 789 (793)	$ 609 (705)	$ 674 (733)	$1,079 (886)
Percent Receiving	32.3%	23.3%	35.0%	41.7%
WORK				
Average Amount to Job Holders[b]	$ 421 (424)	$ 414 (427)	$ 411 (356)	$ 460 (468)
Percent Receiving	22.4%	24.4%	21.7%	23.2%
LOAN				
Average Amount to Loan Recipients[b]	$ 950 (575)	$ 717 (420)	$ 816 (471)	$1,092 (655)
Percent Receiving	20.3%	9.8%	20.1%	31.6%
BENEFIT				
Average Amount to Beneficiaries[b]	$ 854 (732)	$ 797 (794)	$ 822 (686)	$ 925 (721)
Percent Receiving	5.1%	6.2%	4.6%	4.5%

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[a] Tuition dependence is calculated as the share of institutional revenues available for instructional purposes funded through tuition income. Calculated percents exclude students for whom no institution revenue data are available (approximately 14%).

[b] Average amounts calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

TABLE IV-8

Financial Aid Received by 1972-73 Entering Full-Time Freshmen by Type of Aid and Institution Dependence on Government Revenue

TYPE OF AID	GOVERNMENT REVENUE AS SHARE OF INSTRUCTIONAL BUDGET[a]			
	All Students	Up to 20 Percent	20 to 60 Percent	Over 60 Percent
TOTAL AID				
Average Amount to Aid Recipients[b]	$1,084 (935)	$1,556 (1,080)	$ 977 (704)	$ 833 (768)
Percent Receiving	54.0%	61.9%	52.5%	50.7%
GRANT				
Average Amount to Grant Recipients[b]	$ 789 (793)	$1,088 (924)	$ 692 (547)	$ 605 (681)
Percent Receiving	32.3%	42.5%	37.1%	28.7%
WORK				
Average Amount to Job Holders[b]	$ 421 (424)	$ 466 (475)	$ 372 (296)	$ 409 (382)
Percent Receiving	22.4%	24.3%	16.8%	22.9%
LOAN				
Average Amount to Loan Recipients[b]	$ 950 (575)	$1,083 (644)	$ 762 (463)	$ 777 (449)
Percent Receiving	20.3%	31.7%	21.8%	14.5%
BENEFIT				
Average Amount to Beneficiaries[b]	$ 854 (732)	$1,017 (819)	$ 602 (396)	$ 791 (708)
Percent Receiving	5.1%	4.4%	4.6%	5.4%

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[a] Government revenue dependence is calculated as the share of institutional revenues available for instructional purposes funded through all government revenues. Calculated percents exclude students for whom no institution revenue data are available (approximately 14%).

[b] Average amounts calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

TABLE IV-9

Financial Aid Received by 1972-73 Entering Full-Time Freshmen by Type of Aid and Institution Dependence on Gift and Endowment Income

TYPE OF AID	GIFT AND ENDOWMENT INCOME AS SHARE OF INSTRUCTIONAL BUDGET[a]		
	All Students	Up to 10 Percent	Over 10 Percent
TOTAL AID			
Average Amount to Aid Recipients[b]	$1,084 (935)	$ 984 (861)	$1,653 (1,131)
Percent Receiving	54.0%	52.5%	64.8%
GRANT			
Average Amount to Grant Recipients[b]	$ 789 (793)	$ 693 (725)	$1,199 (959)
Percent Receiving	32.3%	31.0%	48.9%
WORK			
Average Amount to Job Holders[b]	$ 424 (421)	$ 428 (409)	$ 420 (429)
Percent Receiving	22.4%	21.8%	28.1%
LOAN			
Average Amount to Loan Recipients[b]	$ 950 (575)	$ 923 (573)	$ 942 (585)
Percent Receiving	20.3%	18.3%	33.4%
BENEFIT			
Average Amount to Beneficiaries[b]	$ 854 (732)	$ 789 (685)	$1,156 (921)
Percent Receiving	5.1%	5.1%	4.4%

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[a] Dependence on gift and endowment income is calculated as the share of institutional revenues available for instructional purposes funded through gift and endowment income. Calculated percents exclude students for whom no institution revenue data are available (approximately 14%).

[b] Average amounts are calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

aid, particularly from grants or loans. Further, those aid recipients enrolled at institutions with a relatively large share of the budget met through tuition (or a relatively small share met through public subsidies) reported an average $1,535 in total aid -- nearly one-half again as large as the average amount reported by all aid recipients. The patterns for term-time workers and beneficiaries were not as pronounced. The recipient shares and average amounts are more nearly equal across these groups.

The observed distribution probably reflects two complementary influences. First, high tuition institutions enrolled students with greater need (even after accounting for difference in the students' family income distributions among institutional groups). Second, these institutions were able to marshal greater amounts of institutional aid funds (from tuition income and other sources) to meet matching requirements and to make more and larger student aid awards.

This latter observation is supported by the distribution of student aid according to institutional private gift and endowment income, presented in Table IV-9. The larger recipient shares for total aid, grant, work, and loans is consistent with at least two complementary explanations. First, greater amounts of the private gift and endowment income might have enabled institutions to apply general institutional funds to student aid purposes. Second, tuitions at these institutions could be high, even after applying gift and endowment income toward instructional costs. As before, work support was least sensitive to the institutional grouping. Significantly, the receipt of this type of aid is less dependent on the financial aid programs and policies of the institution.

Institutional Student Aid Funds. As institutions allocate student aid, they draw upon funds provided by Federal, state, local, and other non-institutional programs in addition to their own discretionary funds. Non-institutional funds generally enable the institution to distribute more, and in some instances, larger amounts of financial aid awards. Discretionary institutional student aid funds also contribute to more, and larger, awards. But, beyond this, there are two other reasons why institutional aid is important. First, these monies can be used to package around relatively rigid award requirements in the non-institutional programs. Greater amounts of institutional funds, then, permit targeting on those types of students the institution wishes to enroll. Second, non-institutional aid programs contain implicit or explicit matching requirements which must be met with institutional funds._/ We can expect more aid to more recipients -- and more pronounced targeting -- at institutions with larger amounts of institutional aid.

Entering full-time freshmen in the NLS enrolled at postsecondary institutions with relatively greater amounts of discretionary aid funds were slightly more likely to receive most types of student aid. As reflected in Table IV-10, this appears to be true for the types of aid administered primarily through the institutions. Whereas 36.6% of students in institutions with larger student aid budgets received a grant and/or scholarship, grant recipients comprised an estimated 30.3% of the students at institutions with smaller amounts of available institutional funds. The recipient shares were more similar for job holders (21.9% compared to 23.7%) and beneficiaries

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_/For example, the Educational Opportunity Grant program called for 50 percent matching with aid from other sources. The College Work-Study and National Direct Loan program Federal allocations to institutions must be augmented by 10 percent from institutional funds.

TABLE IV-10

Financial Aid Received by Entering 1972-73 Full-Time Freshmen by Type of Aid and Available Institution Student Aid Funds

TYPE OF AID	DISCRETIONARY STUDENT AID FUNDS AS SHARE OF STUDENT BUDGET[a]		
	All Students	Up to 5 Percent	Over 5 Percent
TOTAL AID			
Average Amount to Aid Recipients[b]	$1,084 (935)	$1,007 (942)	$1,193 (952)
Percent Receiving	54.0%	52.8%	56.1%
GRANT			
Average Amount to Grant Recipients[b]	$ 789 (793)	$ 686 (812)	$ 896 (792)
Percent Receiving	32.3%	30.3%	36.6%
WORK			
Average Amount to Job Holders[b]	$ 424 (421)	$ 458 (469)	$ 400 (358)
Percent Receiving	22.4%	21.9%	23.7%
LOAN			
Average Amount to Loan Recipients[b]	$ 950 (575)	$1,009 (614)	$ 877 (543)
Percent Receiving	20.3%	18.3%	22.9%
BENEFIT			
Average Amount to Beneficiaries[b]	$ 854 (732)	$ 781 (698)	$ 895 (759)
Percent Receiving	5.1%	5.0%	5.1%

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[a] Students grouped according to the share of student costs of attendance covered by discretionary institutional student aid funds (see text). Calculated percents exclude students for whom no institutional student aid or cost data are available (approximately 14%).

[b] Average amounts calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

(5.0% to 5.1%).

While students enrolled in institutions with larger amounts of institutional aid funds received larger average amounts of total aid, the pattern differed according to the type of aid received. Specifically, job holders and student borrowers attending institutions with smaller amounts of institutional aid funds reported larger average earnings ($458 vs. $400) and larger average loans ($1,009 vs. $877). Most of these aid recipients attended public two-year, proprietary, or vocational institutions at which the loan or job alone provided the only non-family type of aid. Institutions with larger amounts of institutional aid tended to have higher costs and to package aid (see Section 3 below). Hence, aid recipients at these latter schools tended to receive smaller amounts of each of several types of aid.

The receipt and amount of aid reported by the NLS freshmen also appeared to be related to institutional participation in Federal campus-based student aid programs. Except for transfer income benefits, students enrolled at participating institutions were more likely to receive each type of aid. The difference in recipient shares was most pronounced among grant and scholarship winners. As shown in Tables IV-11 to IV-13, approximately 35 percent of entering freshmen attending schools participating in the College Work-Study (CW-S), Educational Opportunity Grant (EOG), or National Direct Student Loan (NDSL) programs received a grant or scholarship. This is six to ten percentage points greater than the share of grant recipients at non-participating institutions.

Paradoxically, average amounts of aid reported by recipients attending institutions which did not receive campus-based aid were generally greater than the mean amounts recorded at participating schools. Notably, average

TABLE IV-11

Financial Aid Received by 1972-73 Entering Full-Time Freshmen by Type of Aid and Institution College Work-Study Funds

TYPE OF AID	COLLEGE WORK-STUDY AID AS SHARE OF STUDENT BUDGET[a]		
	All Students	None	Up to 25 Percent
TOTAL AID			
Average Amount to Aid Recipients[b]	$1,084 (935)	$1,127 (1,073	$1,107 (937)
Percent Receiving	54.0%	52.5%	54.7%
GRANT			
Average Amount to Grant Recipients[b]	$ 789 (793)	$ 876 (1,155)	$ 803 (761)
Percent Receiving	32.3%	28.2%	34.7%
WORK			
Average Amount to Job Holders[b]	$ 424 (421)	$ 477 (519)	$ 418 (396)
Percent Receiving	22.4%	20.6%	23.0%
LOAN			
Average Amount to Loan Recipients[b]	$ 950 (575)	$ 993 (546)	$ 918 (582)
Percent Receiving	20.3%	18.6%	21.1%
BENEFIT			
Average Amount to Beneficiaries[b]	$ 854 (732)	$1,156 (844)	$ 779 (699)
Percent Receiving	5.1%	5.4%	4.8%

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[a] Students grouped according to the share of student costs of attendance covered by College Work-Study funds (see text). Calculated percents exclude students for whom no cost data are available (approximately 14%).

[b] Average amounts calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

TABLE IV-12

Financial Aid Received by 1972-73 Entering Full-Time Freshmen by Type of Aid and Institution Initial Year Educational Opportunity Grant Funds

TYPE OF AID	INITIAL YEAR EOG AID AS SHARE OF STUDENT BUDGET[a]		
	All Students	None	Up to 25 Percent
TOTAL AID			
Average Amount to Aid Recipients[b]	\$1,084 (935)	\$1,071 (1,023)	\$1,116 (941)
Percent Receiving	54.0%	52.6%	54.5%
GRANT			
Average Amount to Grant Recipients[b]	\$ 789 (793)	\$ 769 (1,111)	\$ 815 (766)
Percent Receiving	32.3%	25.8%	35.2%
WORK			
Average Amount to Job Holders[b]	\$ 424 (421)	\$ 481 (477)	\$ 416 (400)
Percent Receiving	22.4%	21.6%	23.0%
LOAN			
Average Amount to Loan Recipients[b]	\$ 950 (575)	\$1,073 (534)	\$ 905 (580)
Percent Receiving	20.3%	19.9%	20.9%
BENEFIT			
Average Amount to Beneficiaries[b]	\$ 854 (732)	\$ 950 (720)	\$ 823 (734)
Percent Receiving	5.1%	4.9%	5.0%

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[a] Students grouped according to share of student costs of attendance covered by Initial Year Educational Opportunity Grants funds (see text). Calculated percents exclude students for whom no cost data are available (approximately 14%).

[b] Average amounts calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

TABLE IV-13

Financial Aid Received by 1972-73 Entering Full-Time Freshmen by Type of Aid and National Direct Student Loan Funds

TYPE OF AID	NATIONAL DIRECT STUDENT LOAN AID AS SHARE OF STUDENT BUDGET[a]		
	All Students	None	Up to 25 Percent
TOTAL AID			
Average Amount to Aid Recipients[b]	$1,084 (935)	$ 918 (968)	$1,151 (947)
Percent Receiving	54.0%	50.9%	55.3%
GRANT			
Average Amount to Grant Recipients[b]	$ 789 (793)	$ 681 (1,008)	$ 832 (773)
Percent Receiving	32.3%	25.8%	35.7%
WORK			
Average Amount to Job Holders[b]	$ 424 (421)	$ 430 (459)	$ 424 (402)
Percent Receiving	22.4%	22.8%	22.7%
LOAN			
Average Amount to Loan Recipients[b]	$ 950 (575)	$ 989 (534)	$ 919 (584)
Percent Receiving	20.3%	15.1%	22.1%
BENEFIT			
Average Amount to Beneficiaries[b]	$ 854 (732)	$ 871 (667)	$ 822 (748)
Precent Receiving	5.1%	5.0%	4.9%

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[a] Students grouped according to the share of student costs of attendance covered by National Direct Student Loan funds (see text). Calculated percents exclude students for whom no cost data are available (approximately 14%).

[b] Average amounts calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

term-time earnings measured $477 for job holders at institutions not participating in the CW-S program, or almost $60 more than the mean amount of earnings reported by student workers attending institutions utilizing CW-S funds (see Table IV-11). Similarly, average loan proceeds are $70 larger ($989 compared to $919) for borrowers attending institutions which received no NDSL funds (see Table IV-13). This pattern was repeated for most types of aid (except grants) and reflected the use of packaging at institutions which receive Federal campus-based student aid funds.

Of particular interest is the slightly larger grants awarded to recipients attending institutions participating in the EOG program. As shown in Table IV-12, these students reported, on on average, $815 in grant and scholarship support (compared to an overall average of $789). In large part, this pattern reflected the matching requirement in EOG (requiring aid from other -- primarily institutional -- sources to match each dollar of EOG aid). This requirement eliminated many public two-year, proprietary, and vocational institutions from the program, since they were unable to match EOG dollars (see EPRC (1975)). More important, it appears that a sizeable amount of the matching was provided through grants, although loan and term-time work opportunities could be used as well.

Institution Type and Control. The net effect of the student and institutional characteristics on the allocation of student aid is shown in Table IV-14. Here, the different institutional sectors incorporate differences in student family income, ability, and racial/ethnic group as well as differences in institutional financing and student aid.

Note that full-time freshmen attending "high cost" institutions were more likely to receive financial aid. Over 60 percent of the entering full-time

TABLE IV-14

Financial Aid Received by 1972-73 Entering Full-Time Freshmen by Type of Aid and Institution Type and Control

TYPE OF AID	INSTITUTION TYPE AND CONTROL							
	All Students	Public Four-Year	Public Two-Year	Private Four-Year	Private Two-Year	Proprietary	Vocational	Other
TOTAL AID								
Average Amount to Aid Recipients[a]	$1,087 (935)	$ 956 (773)	$ 618 (638)	$1,723 (1,112)	$1,044 (877)	$1,262 (823)	$ 885 (708)	$ 963 (805)
Percent Receiving	54.1%	53.2%	47.2%	63.4%	55.1%	62.9%	44.1%	58.1%
GRANT								
Average Amount to Grant Recipients[a]	$ 790 (793)	$ 670 (693)	$ 427 (403)	$1,204 (957)	$ 610 (413)	$ 633 (555)	$ 513 (552)	$ 800 (686)
Percent Receiving	32.4%	34.4%	21.8%	47.9%	36.2%	16.1%	13.4%	30.3%
WORK								
Average Amount to Job Holders[a]	$ 427 (422)	$ 415 (334)	$ 381 (412)	$ 461 (490)	$ 386 (358)	$ 584 (571)	$ 565 (548)	$ 291 (311)
Percent Receiving	22.4%	19.3%	26.3%	25.8%	15.0%	22.6%	17.0%	22.9%
LOAN								
Average Amount to Loan Recipients[a]	$ 950 (575)	$ 798 (456)	$ 760 (506)	$1,040 (632)	$1,285 (880)	$1,365 (564)	$1,106 (398)	$1,081 (418)
Percent Receiving	20.3%	19.6%	7.6%	34.0%	18.4%	36.6%	15.1%	22.0%
BENEFIT								
Average Amount to Beneficiaries[a]	$ 858 (735)	$ 849 (684)	$ 658 (629)	$1,147 (935)	$ 848 (619)	$1,193 (619)	$ 870 (806)	$1,167 (979)
Percent Receiving	5.1%	4.9%	6.2%	3.8%	7.1%	5.1%	6.7%	1.2%

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[a] Average amounts calculated for those reporting type of aid. Standard deviations are shown in parentheses below calculated means.

freshmen at private four-year and proprietary institutions identified themselves as aid recipients. The private four-year college freshmen were among the most likely to receive grants (47.9 percent) or loans (34.0 percent). Proprietary school freshmen were also among the most likely to have used loans (35.6 percent), but were among the least likely to receive grant or scholarship aid (an estimated 16.1 percent share). Less than half of the freshmen at the low cost public two-year institutions reported receiving any term-time aid, and the majority of these recipients reported earnings from term-time employment.

Average total aid to recipients ranged from $618 at public two-year colleges to $1,723 at private four-year institutions. This pattern in average amounts across institution sectors is generally mirrored for grant and scholarship winners and borrowers. The least variation in either recipient shares or average amounts appeared for term-time workers.

3. Packaging of Aid by Student/Family and Institution Attributes

Since costs of attendance and institutional aid funds differ among postsecondary institutions, the need and capacity to package different types of aid also vary greatly. In some instances, however, institutions might package more types of aid or include grant aid to the most desirable students. These general patterns of packaging are considered below.

Student/Family Attributes. Certain types of students tended to receive more types of aid and grant packages than others. The distributions of aid packages according to the attributes of the student recipient are presented in Table IV-15. The distributions suggest that low income, high ability, and minority aid recipients were more likely to receive more than one type of student aid. While over half of the lowest income aid recipients reported more than one type of aid (51.4%), an estimated 22.8 percent of the highest income group received a multiple-type aid package. A similar, although not as pronounced, difference emerges when white and black aid recipients are compared.

Grant packages, with and without other aid, were most common among low income and high ability aid recipients, accounting for 68.3 percent and 75.8 percent of the packages, respectively. But, while the low income aid recipient was less likely to receive grants as a single type of aid, the high ability aided student was relatively more likely to receive grant aid as a single type (36.3% vs. 21.7% for low ability recipients) or packaged with other types of aid (39.5% vs. 25.4% for low ability recipients). Since the high ability students were more likely to attend higher cost, private four-year colleges, this pattern might have reflected the need

TABLE IV-15

Composition of Financial Aid Package Received by 1972-73 Aided Entering Full-Time Freshmen by Selected Student and Family Attributes

STUDENT/FAMILY ATTRIBUTE	Total Aided Freshmen	COMPOSITION OF PACKAGE (Percent Distribution)					
		Single Type Only				More Than One Type	
		Grant	Work	Loan	Benefit	With Grant	Without Grant
All Aided Freshmen	100.0	26.9	18.5	11.8	5.1	32.7	5.0
FAMILY INCOME QUARTILE[a]							
Low	100.0	22.3	9.8	10.3	6.2	46.0	5.4
Lower Middle	100.0	24.8	16.3	11.4	4.6	37.8	5.1
Upper Middle	100.0	28.3	19.9	12.1	4.1	30.1	5.5
High	100.0	31.9	30.4	11.2	3.7	18.4	4.4
ACHIEVEMENT/ABILITY GROUP[b]							
Low	100.0	21.7	24.1	15.0	6.9	26.4	5.9
Lower Middle	100.0	25.5	16.4	12.9	5.6	33.8	5.8
Upper Middle	100.0	30.0	14.0	8.9	3.9	39.7	3.5
High	100.0	36.3	13.3	6.2	1.5	39.5	3.2
RACIAL/ETHNIC GROUP[c]							
White	100.0	27.9	19.3	11.4	5.3	31.6	4.5
Black	100.0	16.6	12.3	15.1	4.0	42.9	9.1
Hispanic	100.0	23.4	10.3	14.7	3.7	39.8	8.1
Other	100.0	29.5	22.1	6.5	2.3	36.3	3.3

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[a] Income quartiles calculated from student-reported income interval estimates: Low = less than $7,500; Lower Middle = $7,500 to $10,500; Upper Middle = $10,500 to $15,000; High = over $15,000. Distributions exclude students for whom no income estimate is available (approximately 18%).

[b] Students are grouped according to SAT-equivalent scores: Low = less than 800; Lower Middle = 800 to 950; Upper Middle = 950 to 1,100; High = over 1,100. Distributions exclude students for whom no SAT-equivalent score is available (approximately 2%).

[c] Students are grouped according to self-identified racial/ethnic category. Other category includes American Indian and Asian-American students. Distributions exclude students for whom no racial/ethnic identification is available (approximately 2%).

faced by higher income families (met with institutional grant aid only) and by lower income families (met with Federal and institutional grant aid plus other types) at these institutions.

It is interesting to note that lower ability, black, or hispanic aid recipients were relatively more likely to rely on loans as the only type of aid. For the low ability recipients, loans apparently met the need that higher ability students filled with other types of aid and multiple type packages. For blacks, however, the relatively heavy use of loans occured in spite of the fact that they were also more likely to receive packages with more than one type of aid (52.0% compared to 36.1% of the white students). Since minorities were more likely to attend public two-year, proprietary, and vocational institutions, the use of loans probably reflected the differences in enrollments across institutional sectors. In addition, minorities might have encountered greater difficulties in lining up part-time, off-campus employment. Either explanation (or a combination of both) could account for the distribution of aid packages across racial/ethnic groups.

Institutional Attributes. The composition of the financial aid package differed according to institutional attributes as well. These differences are evident in Table IV-16. Among 1972-73 aided full-time freshmen, those attending institutions which enrolled relatively higher income or higher ability students were more likely to receive more than one type of aid. In particular, an estimated 37.7 percent of all aided students reported a multiple aid package. Among those enrolled at higher income or higher ability institutions, multiple-type aid packages accounted for 47.6 percent and 51.0 percent of the aid packages, respectively. These same students also were more likely

TABLE IV-16

Composition of Financial Aid Package Received by 1972-73 Aided Entering Full-Time Freshman by Selected Institution Characteristics

INSTITUTION ATTRIBUTE		COMPOSITION OF PACKAGE (Percent Distribution)					
	Total Aided Freshmen	Single Type Only				More Than One Type	
		Grant	Work	Loan	Benefit	With Grant	Without Grant
All Aided Freshmen	100.0	26.9	18.5	11.8	5.1	32.7	5.0
MEDIAN FAMILY INCOME QUARTILES[a]							
Low	100.0	23.7	21.9	13.3	5.8	27.9	7.4
Lower Middle	100.0	27.1	18.6	10.0	5.4	33.5	5.4
Upper Middle	100.0	29.1	10.3	10.8	2.2	44.2	3.4
MEDIAN ACHIEVEMENT/ ABILITY GROUP[b]							
Low	100.0	19.1	21.8	21.7	7.0	23.1	7.3
Lower Middle	100.0	26.5	26.4	9.6	6.6	26.6	4.3
Upper Middle	100.0	30.6	12.9	9.4	3.9	38.2	5.0
High	100.0	27.3	9.8	10.2	1.7	48.2	2.8
INSTITUTION RACE[c]							
Predominantly White	100.0	27.1	18.6	11.7	5.1	32.6	4.9
Predominantly Black	100.0	11.5	15.0	12.9	.9	49.1	10.6

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[a] Students are grouped according to median family income at the institution attended: Low = less than $7,500; Lower Middle = $7,500 to $10,500; Upper Middle = $10,500 to $15,000; High = over $15,000. Distributions exclude students for whom no median family income estimate is available (approximately 22%).

[b] Students are grouped according to the institution-reported median Freshman SAT score: Low = less than 800; Lower Middle = 800 to 950; Upper Middle = 950 to 1,100; High = over 1,100. Students for whom no median Freshman SAT score is available are assumed to be enrolled at non-selective institutions and are assigned an institution SAT score of 374 (see Radner and Miller (1975)).

[c] Students are grouped according to the institution-reported predominant racial/ethnic composition of the student body. Students for whom no institution race identification is available are included in the predominantly white institution distributions.

to have received grants, with or without other types of aid. Notably, aid packages at "low income" or "low ability" institutions consisted, in large part, of loan or work proceeds as the sole source of external support. At institutions with relatively low income students, 21.9 percent of the aid recipients reported earnings as the sole source of aid. For aid recipients attending low ability institutions, about 22 percent received earnings and an equal share relied solely on loans. The 21.7 percent reporting loan aid only was over double the share recorded by their peers attending "upper middle income" institutions.

These comparisons highlight the underlying differences in student costs of attendance and institutional capacities to package aid among institutions. The higher income and higher ability student bodies are located at higher cost private institutions. To some extent, students at these institutions require larger amounts of aid and, hence, a multiple-type aid package. Beyond this, the private institutions have larger amounts of institutional funds, which can account for the large share of grant packages. Public two-year, vocational, and proprietary institutions -- those serving the lower income or lower ability student population -- generally have lower costs of attendance and/or smaller amounts of institutional resources. Either attribute reduces the likelihood of packaging grants or more than one type of aid. Since many loans and term-time jobs are secured by the student through non-institutional channels, the heavy reliance on these types of aid reflects the limited role of the institutional aid office at these schools.[1]

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[1] Among 1971-73 Student Resource Survey respondents, for example, only one-fourth of the jobs were identified as "on-campus" or College Work-Study positions (College Entrance Examination Board [1973a]).

Finally, referring back to Table IV-16, aided students attending predominantly black institutions were almost one-half again as likely to receive a multiple-type aid package as the average aided student. Here, an estimated 59.7 percent received more than one type of aid compared to 37.7 percent for all aided students. This finding should not be surprising, since the predominantly black institutions generally served a lower income clientele. Two differences in the distribution of aid packages between the institution racial groups are of interest, however. First, when all grant recipients were combined (with and without other types of aid), there was a remarkably small difference in the shares receiving grants: 59.7 percent in predominantly white institutions versus 60.6 percent in black institutions. Second, it appears that single type aid recipients at the black colleges were more likely to receive loans. As noted above, both findings are consistent with apparently relatively small amounts of institutional aid funds at the black colleges.

Institutional Financial Characteristics. The composition of the financial aid package appears to be associated with differences in institutional sources of revenue. For institutions receiving a large share of their instructional revenues from student tuitions, the greater need for financial aid appeared to be met through multiple-type packages or loans. This finding emerges from the data presented in Table IV-17. An estimated 49.0 percent of aided NLS full-time freshmen enrolled at high tuition-dependent schools reported receiving more than one type of aid. Further, these students were almost twice as likely to have received a loan as their peers attending lower tuition institutions (12.3 percent compared to 6.7). As expected, the pattern was reversed when students were grouped according to institution dependence on government revenue.

TABLE IV-17

Composition of Financial Aid Package Received by 1972-73 Aided Entering Full-Time Freshmen by Selected Institutional Financial Characteristics

INSTITUTION FINANCIAL CHARACTERISTIC		COMPOSITION OF PACKAGE (Percent Distribution)					
	Total Aided Freshmen	Single Type Only				More Than One Type	
		Grant	Work	Loan	Benefit	With Grant	Without Grant
All Aided Freshmen	100.0	26.9	18.5	11.8	5.1	32.7	5.0
TUITION AS SHARE OF INSTRUCTIONAL BUDGET[a]							
Up to 20 Percent	100.0	26.0	31.5	6.7	7.6	23.9	4.3
20 to 60 Percent	100.0	29.5	16.3	10.9	4.0	34.6	4.7
Over 60 Percent	100.0	24.7	10.3	12.3	3.7	43.3	5.7
GOVERNMENT REVENUE AS SHARE OF INSTRUCTIONAL BUDGET[a]							
Up to 20 Percent	100.0	24.6	10.4	11.8	3.3	44.0	5.9
20 to 60 Percent	100.0	31.9	12.6	10.6	4.0	38.9	2.0
Over 60 Percent	100.0	28.1	23.5	9.4	5.8	28.5	4.7
GIFT AND ENDOWMENT INCOME AS SHARE OF INSTRUCTIONAL BUDGET[a]							
Up to 10 Percent	100.0	27.7	19.7	11.1	5.3	31.2	5.0
Over 10 Percent	100.0	24.6	9.7	7.6	2.2	51.0	4.9

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[a] Calculated as share of institutional revenues available for instructional purposes funded through specified source. Distributions exclude students for whom no institution revenue data are available (approximately 14%).

Institutions which utilized greater amounts of gift and endowment income were more likely to package several types of aid to their needy students: 55.9 percent of all aided students at these schools received multiple-type aid packages. Since these institutions were more likely to be private, the multiple-type aid packages probably filled a need for larger amounts of aid. It is interesting to note that the institutions employing greater shares of gift and endowment income were able to package around grants and scholarships to over three-fourths of their aid recipients. As shown, this reduced the share of recipients at these institutions employing term-time earnings, loan proceeds, or transfer income benefits as their sole source of external support.

Student Aid Budgets. Finally, a comparison of the distribution of packages according to sources of institutional aid funds is presented in Table IV-18. The pattern of packages for each student aid budget source was similar. Institutions with greater amounts of discretionary student aid funds or participating in a Federal campus-based student aid program were more likely to provide multiple-type packages. Over 43 percent of the aid packages at institutions utilizing greater relative amounts of discretionary aid received this type of package, a full five percentage points greater than the proportion evidenced by other institutions. When students are grouped according to their institution's participation in Federal campus-based aid programs, the same pattern emerged.

Two factors can account for the observed distributions. First, private colleges, which imposed greater tuition charges on their students, were more likely to use and require institutional and Federal funds in meeting relatively greater student needs. Second, the Federal programs included explicit and implicit matching requirements within the programs and with other types and sources of aid. Institutions lacking the need to package large amounts of aid per student, or lacking the resources to meet the matching requirements, would not participate in the programs.

TABLE IV-18

Composition of Financial Aid Package Received by 1972-73 Aided Entering Full-Time Freshmen by Selected Institution Student Aid Budget Characteristics

INSTITUTION ATTRIBUTE	COMPOSITION OF PACKAGE (Percent Distribution)						
	Total Aided Freshmen	Single Type Only				More Than One Type	
		Grant	Work	Loan	Benefit	With Grant	Without Grant
All Aided Freshmen	100.0	26.9	18.5	11.8	5.1	32.7	5.0
DISCRETIONARY STUDENT AID FUNDS AS SHARE OF STUDENT BUDGET[a]							
Up to 5 Percent	100.0	27.2	20.7	10.8	5.2	31.4	4.7
Over 5 Percent	100.0	26.9	15.8	9.2	4.5	38.5	5.1
COLLEGE WORK-STUDY FUNDS AS SHARE OF STUDENT BUDGET[b]							
None	100.0	25.4	21.9	14.0	7.0	28.2	6.5
Up to 25 Percent	100.0	27.5	17.2	10.0	4.3	35.9	4.8
INITIAL YEAR EDUCATIONAL OPPORTUNITY GRANT FUNDS AS SHARE OF STUDENT BUDGET							
None	100.0	23.7	21.7	16.3	6.4	25.4	6.5
Up to 25 Percent	100.0	27.6	17.1	9.6	4.5	36.4	4.8
NATIONAL DIRECT STUDENT LOAN FUNDS AS SHARE OF STUDENT BUDGET[b]							
None	100.0	26.6	25.8	12.3	6.3	23.9	5.1
Up to 25 Percent	100.0	27.3	16.0	10.2	4.3	37.3	4.9

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[a] Students grouped according to share of student costs of attendance covered by average discretionary institutional student aid outlays (see text). Distributions exclude students for whom no institutional data are available (approximately 14%).

[b] Students grouped according to share of student costs of attendance covered by average student aid outlay from specified program (see text). Distributions exclude students for whom no institutional data are available (approximately 14%).

Institution Type and Control. The distribution of packages within each institutional sector presented in Table IV-19 reflects the cumulative effects of student aid institutional factors. In 1972-73, about 62 percent of all aided entering full-time freshmen received a single type of aid. The estimated shares of recipients with one type of aid only ranged from 44 percent at private four-year institutions to 84 percent at vocational schools. Public two-year and proprietary school recipients were more likely than the average aid recipient to receive a single type of aid.

In part, these differences reflected differences in student costs of attendance. Those attending the higher cost, private four-year institutions required larger amounts (and more types) of aid. The differences also reflected the matching requirements in Federal campus-based student aid programs and the availability of institutional funds. The latter observation emerges from comparing the distributions of packages for private four-year and proprietary school aid recipients. Although costs of attendance were nearly the same in both sectors, aid recipients in private four-year colleges were more likely to receive a package with more than one type of aid. In fact, about half of all aided private four-year college students received a multiple type aid package which included some grant or scholarship support. On the other hand, proprietary school recipients relied most heavily on loans -- an estimated 37.5% reported this aid as their sole resource of external support. Further, those proprietary school aid recipients receiving more than one type of aid were about equally likely to report an aid package with or without grant support. Again, the finding implies that these students utilized non-institutional aid sources -- GSL, regular bank loans, transfer income benefits, and part-time jobs -- to meet their expenses.

TABLE IV-19

Composition of Financial Aid Package Received by 1972-73 Aided Entering Full-Time Freshmen by Institution Type and Control

	Total Aided Freshmen	COMPOSITION OF PACKAGE (Percent Distribution)					
		Single Type Only				More Than One Type	
		Grant	Work	Loan	Benefit	With Grant	Without Grant
All Institutions	100.0	26.9	18.4	11.7	5.1	33.0	4.9
Public Four-Year	100.0	31.0	15.0	11.6	4.7	33.7	4.0
Public Two-Year	100.0	24.5	35.9	6.3	7.6	21.7	4.0
Private four-Year	100.0	25.3	9.0	8.0	2.2	50.1	5.4
Private Two-Year	100.0	38.4	7.9	17.0	8.1	27.2	1.4
Proprietary	100.0	12.8	18.2	37.5	5.5	12.6	13.4
Vocational	100.0	20.4	24.0	24.3	14.5	9.9	6.9
Other	100.0	23.7	23.1	20.8	1.1	28.3	3.0

4. Distribution and Packaging of Federal Aid by Student/Family and Institution Attributes

Subject to program restrictions and institutional policies, the financial aid received by the student consists of different amounts of funds combined from Federal and non-Federal sources. From the perspective of the Federal policy-maker, it is useful to know how Federal aid is distributed along various student and institutional categories. Further, it is helpful to examine the extent to which Federal aid is augmented by aid from non-Federal sources.[/] These patterns are examined below.

Student/Family Attributes. In 1972-73, Federal student aid appeared to be distributed to lower income or minority aid recipients. Further, when non-Federal aid was packaged with Federal aid, these disadvantaged student groups were more likely to receive the combined aid than higher income or majority students. These conclusions emerge from an examination of the data presented in Table IV-20 Here, aid recipients are partitioned into three package categories: recipients of a combined Federal/non-Federal package, recipients of Federal aid only, and recipients of non-Federal aid only. Note that an estimated 75 percent of aided low income, full-time freshmen reported Federal student aid from both sources, compared to a 36.6 percent share among their high income peers. In large part, the findings for low income aid

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[/] The discussion which follows is descriptive. Given the available data, it is impossible to say if Federal aid encouraged larger amounts of non-Federal aid to the Federally-aided students than would be the case without Federal aid. In fact, some have argued that Federal aid merely substitutes for the non-Federal aid, freeing up funds for other students. While not resolved here, two points suggest that Federal aid programs are generating non-Federal aid to the target groups. First, the Federally-aided student reported almost twice as much aid as his/her non-Federally aided peer. Second, while 80 percent of all student aid in 1972-73 derived from Federal sources, almost half of the NLS full-time aid recipients reported aid from a non-Federal source.

TABLE IV-20

Packaging of Federal Aid to 1972-73 Aided Entering Full-Time Freshmen by Student and Family Attributes

STUDENT/FAMILY ATTRIBUTE	PERCENT OF AIDED FULL-TIME FRESHMEN			
	Total Aided Freshmen	Receiving Federal and Non-Federal Aid	Receiving Federal Aid Only	Receiving Non-Federal Aid Only
All Aided Freshmen	100.0	28.2	27.3	44.5
FAMILY INCOME QUARTILE[a]				
Low	100.0	38.6	36.0	25.4
Lower Middle	100.0	31.9	28.0	40.1
Upper Middle	100.0	27.7	23.1	49.2
High	100.0	16.2	20.4	63.4
ACHIEVEMENT/ABILITY GROUP[b]				
Low	100.0	22.6	36.3	41.1
Lower Middle	100.0	31.6	27.1	41.3
Upper Middle	100.0	31.0	22.6	46.4
High	100.0	35.4	13.4	51.2
RACIAL/ETHNIC GROUP[c]				
White	100.0	27.3	25.3	47.4
Black	100.0	32.6	48.7	18.7
Hispanic	100.0	39.4	39.0	21.6
Other	100.0	32.5	20.2	47.3

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[a] Income quartiles calculated from student-reported income interval estimates: Low = less than $7,500; Lower Middle = $7,500 to $10,500; Upper Middle = $10,500 to $15,000; High = over $15,000. Distributions exclude students from whom no income estimate is available (approximately 18%).

[b] Students are grouped according to SAT-equivalent scores: Low = less than 800; Lower Middle = 800 to 950; Upper Middle = 950 to 1,100; High = over 1,100. Distributions exclude students for whom no SAT-equivalent score is available (approximately 2%).

[c] Students are grouped according to self-identified racial/ethnic category. Other category includes American Indian and Asian-American students. Distributions exclude students for whom no racial/ethnic identification is available (approximately 2%).

recipients apply as well to minority recipients. Compared to their majority peers, the aided full-time minority freshmen were over half again as likely to have received Federal aid (about 80 percent of black and hispanic packages versus 50 percent of aid packages to white students). Aided students from low income families were about equally likely to receive a combined Federal/non-Federal package (38.6%) and a Federal aid only package (36.0%). While this pattern did not vary greatly across family income groups, the packaging of Federal aid apparently differed according to the student's racial/ethnic group. Note, in particular, that nearly half (48.7%) of all aided full-time black freshmen reported Federal aid only. About one-third reported the combined Federal/non-Federal package. The relatively large amount of Federal aid utilized at predominantly black colleges (see below) and relatively greater black enrollment in proprietary institutions (which tended to rely on Federally-Insured Student Loans) can explain, in part, the observed distribution of packages.

When 1972-73 full-time aided freshmen are grouped according to their achievement/ability scores, no large differences in the share of packages with Federal aid are apparent. These packages accounted for 49 (high ability) to 59 (low ability) percent of all packages awarded._/ But, while the low achievement/ability aided student was more likely to have received Federal aid only (36.3 percent) the higher ability aid recipient tended to report the combined Federal/non-Federal package (35.4 percent). In part, this difference reflected the distribution of students by institution type.

_/In an earlier study, the authors have noted that the distribution of Federal aid appeared to differ by the type of Federal aid. Low ability students were more likely to receive Federal work, Federal loans, or Federal transfer income benefits. High ability students evidenced a greater likelihood to receive Federal grants or scholarships (see Wagner and Tenison (1976b).

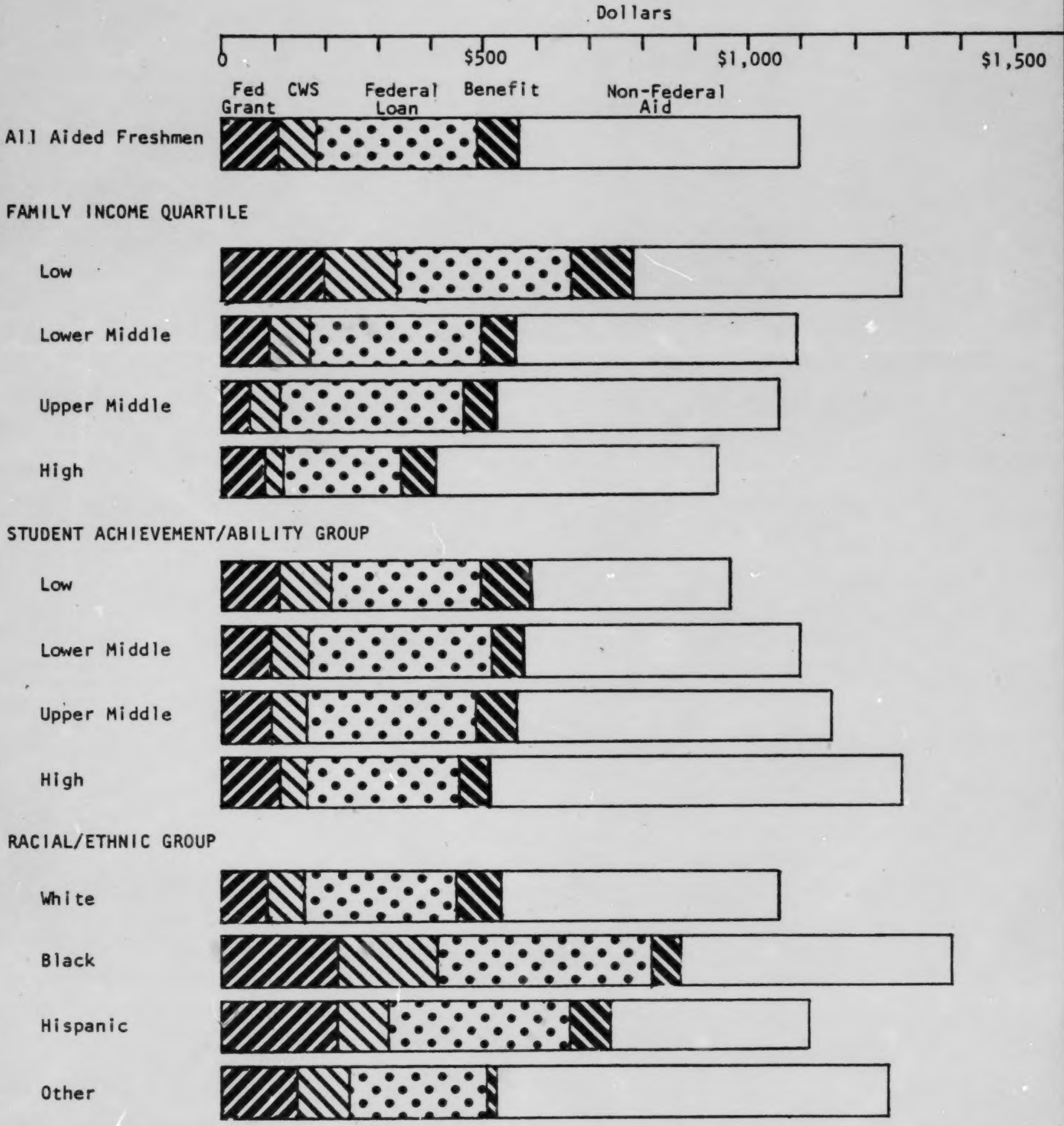
Lower ability aided freshmen tended to enroll at public two-year, proprietary, or vocational institutions where Federal loans or work provided the only necessary or available aid. Higher achievement/ability students tended to enroll at four-year institutions. Here, the somewhat greater costs of attendance and larger amounts of available institutional aid led to combined packages.

The absolute and relative amounts of Federal aid awarded to the "typical" aided freshmen within each student/family partitioned group is visually displayed in Figure IV-1. The average aided freshmen reported $565 in Federal aid which represented about half of the total aid package. Within aid packages, greater amounts of Federal dollars were awarded to low income ($777), black ($874), and hispanic ($736) full-time freshmen. Across achievement/ability groups, the Federal dollars received did not vary greatly, although Federal aid as a share of the total aid package declined when the "typical" package received by low and high achievement/ability groups were compared (61% vs. 39%). For black and hispanic aided full-time freshmen, the larger amounts of Federal aid also represented a larger share -- over 60 percent -- of the total aid received.

Average amounts of each type of Federal aid were generally greater for black and low income aid recipients. This appeared to be clearly true for Federal grants and scholarships ($198 and $224 for low income and black freshman aid recipients, respectively) and College Work-Study earnings ($128 and $184, respectively). In each case, the amounts were about double the average $104 in Federal grants and scholarships and $76 in College Work-Study earnings recorded overall. The differences can be explained by two factors. First, as noted above, low income and minority freshmen aid recipients were more likely to receive Federal aid. Second, students in

FIGURE IV-1

Composition of Financial Aid Package Received by 1972-73 Aided Entering Full-Time Freshmen by Type of Federal Aid and Student/Family Attributes



these groups tended to receive larger amounts of Federal aid (with _or_ without other aid).

With the variation across groups in mean amounts of aid represented in the "typical" aid package, Federal loans provided a ready contrast. Mean reported loan amounts ranged from 75% (for high income aid recipients) to 135% (for black aid recipients) of the overall mean, $304. The relatively narrow range reflects the wide-spread use of Federal loans in all groups as well as fixed dollar limits on borrowing in the Federal loan programs.

Institutional Attributes. Since institutions must confront different types of student financial needs according to the type of student served, it is of some interest to examine the use of Federal aid across institutional groups. In the Table IV-21, 1972-73 entering full-time freshmen aid recipients are grouped according to the median family income, median achievement/ability score, and predominant race at the institution attended.

Across income and ability groups, the share of recipients reporting Federal aid varied slightly. More pronounced differences emerged between the types of Federal packages. Specifically, 21.5 percent and 20.2 percent of the packages at "low income" and non-selective (i.e., "low ability") institutions consisted of both Federal and non-Federal aid. By contrast, the share of combined Federal/non-Federal packages at the "upper middle income" and selective institutions exceeded 40 percent -- nearly double. Since institutions enrolling relatively higher income or higher ability students included a disproportionately large number of private and public four-year colleges, the greater share of combined packages might have been the net result of higher student costs (requiring more aid dollars per enrolled student) and the non-Federal institutional funds available to help

TABLE IV-21

Packaging of Federal Aid to 1972-73 Aided Entering Full-Time Freshmen by Institution Attributes

INSTITUTION ATTRIBUTE	PERCENT OF AIDED FRESHMEN			
	Total Aided Freshmen	Receiving Federal and Non-Federal Aid	Receiving Federal Aid Only	Receiving Non-Federal Aid Only
All Aided Freshmen	100.0	28.2	27.3	44.5
MEDIAN FAMILY INCOME QUARTILE[a]				
Low	100.0	21.5	36.5	42.1
Lower Middle	100.0	28.9	25.6	45.4
Upper Middle	100.0	40.2	18.9	41.0
MEDIAN FRESHMAN ACHIEVEMENT/ABILITY GROUP[b]				
Low	100.0	20.2	39.3	40.5
Lower Middle	100.0	22.3	29.4	48.2
Upper Middle	100.0	31.9	23.3	44.8
High	100.0	44.1	16.2	39.6
INSTITUTION RACE[c]				
Predominantly White	100.0	26.7	28.2	45.1
Predominantly Black	100.0	60.7	27.9	11.4

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[a] Students are grouped according to median family income at the institution attended: Low = less than $7,500; Lower Middle = $7,500 to $10,500; Upper Middle = $10,500 to $15,000; High = over $15,000. Distributions exclude students for whom no median family income estimate is available (approximately 22%).

[b] Students are grouped according to the institution-reported median Freshman SAT score: Low = less than 800; Lower Middle = 800 to 950; Upper Middle = 950 to 1,100; High = over 1,100. Students for whom no median Freshman SAT score is available are assumed to be enrolled at non-selective institutions and are assigned an institution SAT score of 374 (see Radner and Miller (1975)).

[c] Students are grouped according to the institution-reported predominant racial/ethnic composition of the student body. Students for whom no institution race identification is available are included in the predominantly white institution distributions.

families defray these costs.

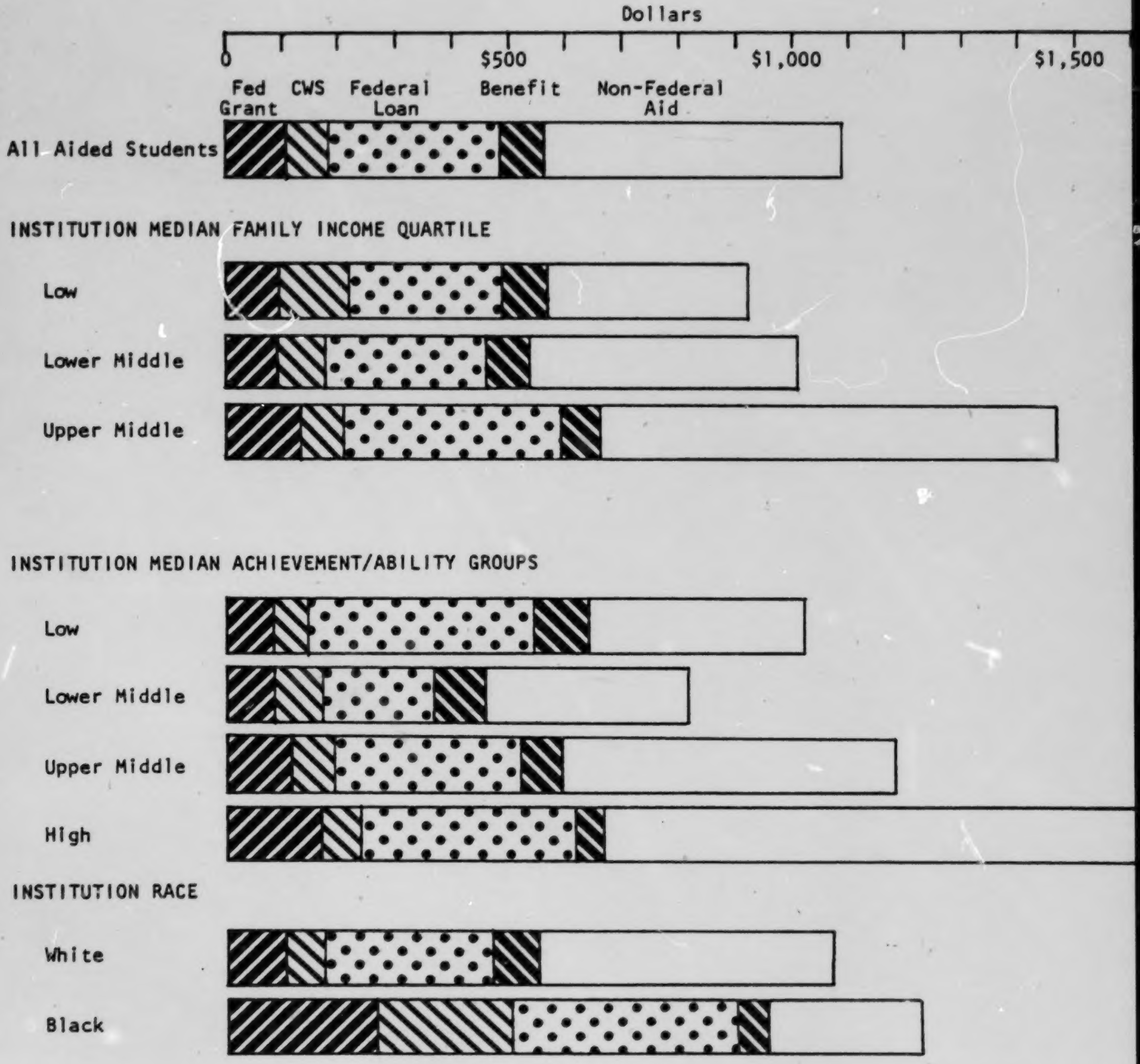
The special Federal financing arrangements for predominantly black institutions are evident in Table IV-21. Only one-tenth of the packages awarded at these schools included aid solely derived from non-Federal sources. It is interesting to note, however, that Federal aid was augmented by non-Federal student aid in 60.7 percent of the packages. While important, Federal aid at these institutions provided only part -- albeit a large part -- of the student aid awarded.

Figure IV-2 illustrates the 1972-73 distribution of Federal aid in a different way. Here, the absolute amounts and relative shares of Federal aid in the "typical" aid package are shown for each partioned group. Across median family income and median ability groups, aided full-time freshmen attending "upper middle income" or "low ability" or "high ability" institutions recorded the largest mean amounts of Federal aid (about $650 compared to $565 overall). At the "low income" or non-selective ("low ability") institutions, however, Federal aid comprised the largest relative share of the aid to the "typical" recipient. As noted earlier, institutions serving higher income and higher ability student bodies were primarily higher cost, private and public four-year institutions. Hence, larger amounts of aid from all sources were required to meet student needs. Packages at the non-selective institutions (including many proprietary schools) consisted of large absolute (and relative) amounts of Federal aid. For these institutions, the external support needed to enable many of their students to enroll was not available from non-Federal sources.

Consistent with the latter observation, it is interesting to note that Federal aid available through non-institutional channels (loans and benefits)

FIGURE IV-2

Composition of Financial Aid Package Received by 1972-73 Aided Entering Full-Time Freshmen by Type of Federal Aid and Institutional Attributes



at these institutions measured $493, or about $100 more than the $385 average overall. Federal grant and scholarship aid was greater at "upper middle income" and highly selective institutions.

Finally, the importance of Federal aid at predominantly black colleges emerges from the data presented in Figure IV-2. The average $964 in Federal aid represented over three-fourths of all aid awarded to the "typical" black college aid recipient. With exception of Federal loans, the mean amounts of each type of Federal aid in the black college package were over twice the amounts included in the aid package at predominantly white institutions.

Institution Financial Characteristics. The methods which institutions employ to finance instructional costs can influence the packaging of Federal aid in two ways. First, those utilizing tuition as the principal source of financing would require greater amounts of student aid to fund relatively larger student needs. Second, these institutions might also be able to divert general institutional revenues to match Federal aid dollars. The distributions in Table IV-22 lend evidence to these observations. Institutions utilizing tuition income to cover at least 60 percent of their institutional costss tended to package more Federal aid. At these institutions, 63.1 percent of the aid packages included Federal aid compared to a 49.0 percent share at low tuition institutions. Of the Federal aid packages, two out of three included non-Federal aid as well (or 41.1 percent of all aid packages). Not surprisingly, the distribution of packages by institutional dependence on government revenue was just the opposite.

Gift and endowment income is the most discretionary of all institutional revenue sources. To the extent that greater amounts of this income were applied to instructional costs, student budgets would be lower and insti-

TABLE IV-22

Packaging of Federal Aid to 1972-73 Aided Entering Full-Time Freshmen by Institution Financial Characteristics

INSTITUTION FINANCIAL CHARACTERISTICS	PERCENT OF AIDED FULL-TIME FRESHMEN			
	All Aided Freshmen	Receiving Federal and Non-Federal Aid	Receiving Federal Aid Only	Receiving Non-Federal Aid Only
All Students	100.0	28.2	27.3	44.5
TUITION AS SHARE OF INSTRUCTIONAL BUDGET[a]				
Up to 20 Percent	100.0	19.7	29.3	51.0
20 to 60 Percent	100.0	26.8	27.5	45.8
Over 60 Percent	100.0	41.1	22.0	36.9
GOVERNMENT REVENUE AS SHARE OF INSTRUCTIONAL BUDGET[a]				
Up to 20 Percent	100.0	41.3	22.1	36.5
20 to 60 Percent	100.0	30.6	27.0	42.4
Over 60 Percent	100.0	22.2	28.6	49.2
GIFT AND ENDOWMENT INCOME AS SHARE OF INSTRUCTIONAL BUDGET[a]				
Up to 10 Percent	100.0	26.0	27.4	46.5
Over 10 Percent	100.0	46.6	20.2	33.2

---

[a] Calculated as share of institutional revenues available for instructional purposes funded through specified source. Distributions exclude students for whom no institution revenue data are available (approximately 14%).

tuitional student aid matching funds reduced. In both cases, lower amounts of aid from all sources would be needed and Federal funds obtained through matching programs would be reduced.

In fact, just the reverse appears to be true. Institutions employing relatively large amounts of gift and endowment income to finance instructional costs also reported a larger share of packages with Federal aid (66.8 percent) and of packages which combined Federal and non-Federal aid (46.6 percent) than was the case for all aid packages. This result suggests that these institutions had relatively high tuition, even with relatively larger incomes from private gifts and endowments. It also suggests that these institutions retain relatively large amounts of general institutional revenue which could be used to match Federal aid dollars. Both the need for, and availability of, aid from all sources would then be increased.

Institutional Student Aid Funds. The packaging of Federal aid varied slightly according to the availability of institutional student aid funds. As shown in Table IV-23, Federal aid packages accounted for 53 percent of all packages at institutions with small amounts of institutional aid. Institutions with larger amounts of the institutional funds available for matching included Federal aid in 58.5 percent of the packages. Most of this difference occurred in the share of combined Federal/non-Federal aid packages.

The pattern reflects the nature of the institutions within each group. Students attending institutions with little discretionary student aid depended on Federal loans, benefits, and non-institutional part-time work to meet their financial needs. Students enrolled at well-funded institutions, including a large share of public and private four-year institutions, received Federal campus-based aid matched by institutional funds or a Federal guaranteed loan.

TABLE IV-23

Packaging of Federal Aid to 1972-73 Aided Entering Full-Time Freshmen by Institutional Student Aid Funds

INSTITUTIONAL STUDENT AID	PERCENT OF AIDED FULL-TIME FRESHMEN			
	All Aided Freshmen	Receiving Federal and Non-Federal Aid	Receiving Federal Aid Only	Receiving Non-Federal Aid Only
All Aided Freshmen	100.0	28.2	27.3	44.5
DISTRETIONARY STUDENT AID FUNDS AS SHARE OF BUDGET[a]				
Up to 5 Percent	100.0	26.8	26.4	46.8
Over 5 Percent	100.0	33.1	25.4	41.5

---

[a] Students grouped according to share of student costs of attendance covered by average discretionary institutional student aid outlays (see text). Distributions exclude students for whom no institutional data are available (approximately 14%).

Institution Type and Control. As noted at various points above, such factors as student costs of attendance, sources of revenue, institutional student aid funds, and financial aid staff vary systematically across institutional sectors. That the packaging of Federal student aid was associated with these differences among institutional sectors is evident from the distributions presented in Table IV-24. Whereas 55.5 percent of all aided freshmen reported receiving Federal aid in their package, the shares ranged from 44.7 percent of the packages at public two-year institutions to 65.8 percent and 66.2 percent of the packages at private four-year and proprietary institutions, respectively. However, while equal shares of freshman aid recipients utilized Federal aid within the latter two institution groups, quite different patterns emerge in the packaging of Federal aid. Nearly half of the 1972-73 aided full-time freshmen enrolled at private four-year colleges received a combined Federal/non-Federal package, while another 19.1 percent reported Federal aid only. The distribution of types of Federal packages among proprietary students was just the opposite -- about half reported Federal aid only. Here, differences in institutional capacities to package aid were probably most influential. Private colleges were better able to meet matching requirements through institutional funds and better able to package aid through relatively well-staffed financial aid offices. Although facing similar student needs, proprietary schools lacked both institutional matching funds and financial aid staff. Hence, the heavy reliance on Federal aid only -- almost solely from Federally-Insured Student Loans -- provided the means to meet student needs.

The foregoing observations are reinforced when the absolute and relative amounts of Federal aid received by the "typical" aided freshmen within each

TABLE IV-24

Packaging of Federal Aid to 1972-73 Aided Entering Full-Time Freshmen by Institution Type and Control

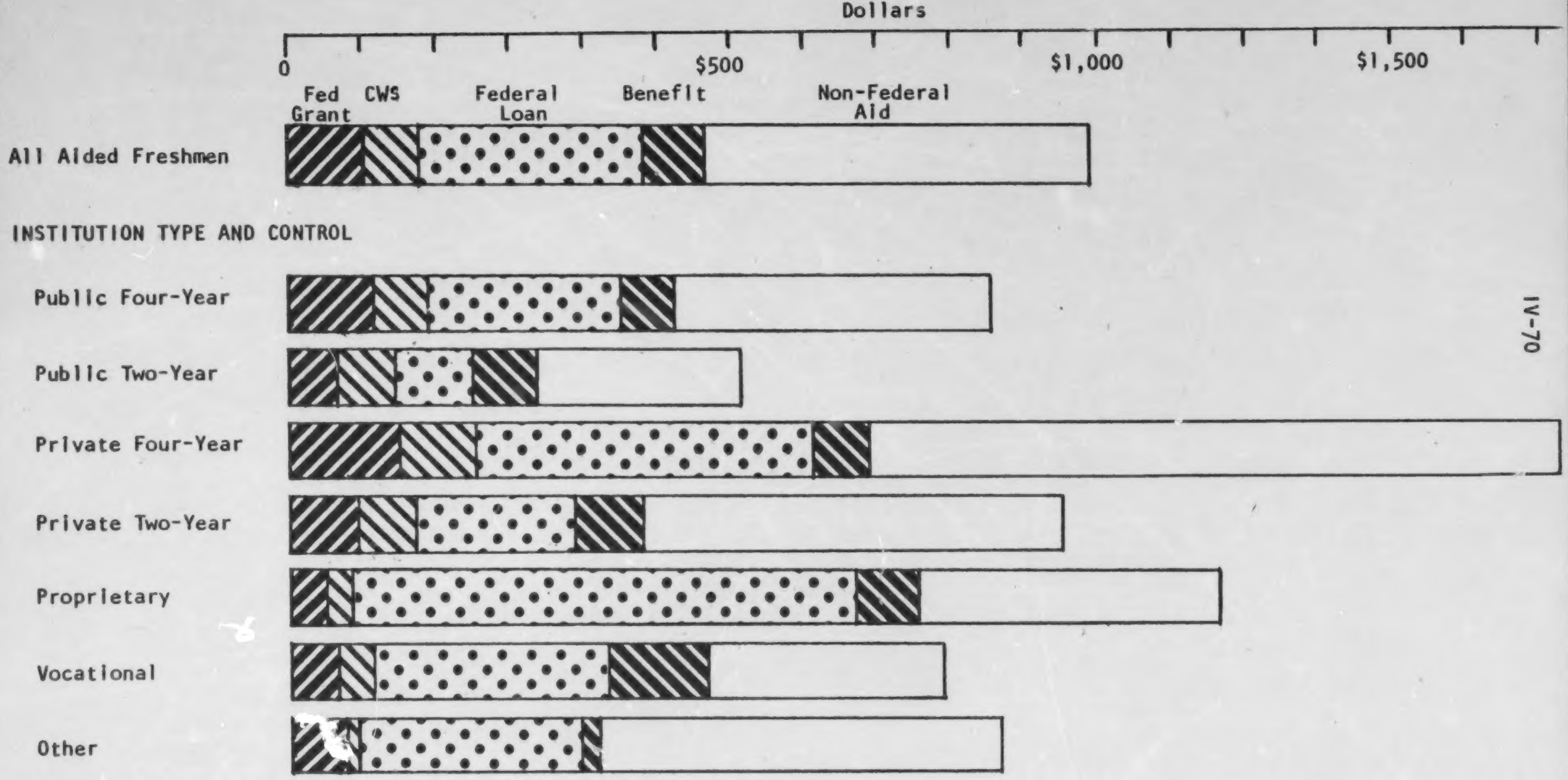
	PERCENT OF AIDED FULL-TIME FRESHMEN			
	All Aided Freshmen	Receiving Federal and Non-Federal Aid	Receiving Federal Aid Only	Receiving Non-Federal Aid Only
All Aided Freshmen	100.0	28.2	27.3	44.5
INSTITUTION TYPE AND CONTROL				
Public Four-Year	100.0	25.9	28.3	45.7
Public Two-Year	100.0	17.3	27.4	55.3
Private Four-Year	100.0	46.7	19.1	34.2
Private Two-Year	100.0	26.9	18.7	54.3
Profit-Making	100.0	21.0	45.2	33.8
Vocational	100.0	10.6	47.5	41.9
Other	100.0	14.9	31.3	53.8

institutional sector are compared. As shown in Figure IV-3, Federal aid and Federal loans formed the largest absolute and relative amount within the proprietary sector. Overall, the "typical" freshman aid recipient received about 52 percent of his/her package from Federal programs, or $565. Among proprietary school aid recipients, Federal aid averaging $855 represented 68 percent of the "typical" package.

Among types of Federal aid, Federal grants and scholarships tended to be greater for private and public four-year college students (averaging $150 and $118, respectively). College Work-Study earnings tended to be greater among collegiate aid packages while Federal transfer income benefits and Federal loans, more readily available through non-institutional channels, were at least at the average or greater among recipients at proprietary or vocational schools.

FIGURE IV-3

Composition of Financial Aid Package Received by 1972-73 Aided Entering Full-Time Freshmen by Type of Federal Aid and Institution Type and Control



Appendix IV-A

Percent of 1972-73 Entering Full-Time Freshmen Receiving Aid by Type of Aid, Student/Family or Institution Attribute and Institution Type and Control

List of Tables

TABLE	
A-1	Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Family Income Quartile and Institution Type and Control
A-2	Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Family Income Quartile and Institution Type and Control
A-3	Percent of 1972-73 Entering Full-Time Freshmen Receiving Term-Time Earnings by Family Income Quartile and Institution Type and Control
A-4	Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Family Income Quartile and Institution Type and Control
A-5	Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Family Income Quartile and Institution Type and Control
A-6	Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Achievement/Ability Group and Institution Type and Control
A-7	Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Achievement/Ability Group and Institution Type and Control
A-8	Percent of 1972-73 Entering Full-Time Earnings by Achievement/Ability Group and Institution Type and Control
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A-13 Percent of 1972-73 Entering Full-Time Freshmen Receiving Term-Time Earnings by Racial/Ethnic Group and Institution Type and Control

A-14 Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Racial/Ethnic Group and Institution Type and Control

A-15 Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Racial. Ethnic Group and Institution Type and Control

A-16 Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Median Family Income at Postsecondary Institution and Institution Type and Control

A-17 Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Median Family Income at Postsecondary Institution and Institution Type and Control

A-18 Percent of 1972-73 Entering Full-Time Freshmen Receiving Term-Time Earnings by Median Family Income at Postsecondary Institution and Institution Type and Control

A-19 Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Median Family Income at Postsecondary Institution and Institution Type and Control

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TABLE

A-21 Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Median Freshmen Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

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A-23 Percent of 1972-73 Entering Full-Time Freshmen Receiving Term-Time Earnings by Median Freshman Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

A-24 Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Median Freshman Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

A-25 Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Median Freshmen Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

A-26 Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Institution Tuition Dependence and Institution Type and Control

A-27 Percent of 1972-73 Entering Full-Time Freshment Receiving Grants or Scholarships by Institution Tuition Dependence and Institution Type and Control

A-28 Percent of 1972-73 Entering Full-Time Freshmen Receiving Term-Time Earnings by Institution Tuition Dependence and Institution Type and Control

A-29 Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Institution Tuition Dependence and Institution Type and Control

A-30 Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Institution Tuition Dependence and Institution Type and Control

List of Tables (cont'd.)

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A-32 Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Institution Dependence on Government Revenue and Institution Type and Control

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A-41 Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Institution Aid Funds and Institution Type and Control

A-42 Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Available Institutional Aid Funds and Institution Type and Control

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A-44 Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Available Institutional Aid Funds and Institution Type and Control

A-45 Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Available Institutional Aid Funds and Institution Type and Control

TABLE A-1

Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Family Income Quartile and Institution Type and Control

FAMILY INCOME

INST TYPE	MEAN COUNT	UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	OVER $15,000 4	ROW TOTAL
PUBLIC 4-YEAR	1	82,05 1025	68,91 1082	55.03 1460	33,06 1860	55,38 5427
PUBLIC 2-YEAR	2	66,67 713	59,19 679	44.53 930	24,61 729	48,21 3051
PRIVATE 4-YEAR	3	89,07 350	81,67 510	71.13 714	43,53 1078	64,30 2651
PRIVATE 2-YEAR	4	89,32 39	53,18 42	61.51 58	39,84 110	54,92 248
PROFIT-MAKING	5	77,52 149	76,50 158	64.31 196	42,25 105	66,93 608
VOCATIONAL	6	56,72 159	33,41 92	34.09 126	34,61 63	42,20 441
OTHER	7	71,28 29	62,19 69	56.42 40	45,10 39	58,62 177
COLUMN TOTAL		76,67 2465	67,66 2632	55.41 3523	34,92 3983	55,65 12603

TABLE A-2

Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Family Income Quartile and Institution Type and Control

INST TYPE	MEAN COUNT	FAMILY INCOME UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	OVER $15,000 4	ROW TOTAL
PUBLIC 4-YEAR	1	61,70 1025	48,76 1082	33.99 1460	16,63 1860	36,22 5427
PUBLIC 2-YEAR	2	41,15 713	26,35 679	18.54 930	5,59 729	22,47 3051
PRIVATE 4-YEAR	3	77,86 350	62,30 510	54.19 714	28,24 1078	48,32 2651
PRIVATE 2-YEAR	4	59,71 39	44,16 42	52.03 58	20,14 110	37,82 248
PROFIT-MAKING	5	24,61 149	21,43 158	14.07 196	11,33 105	18,10 608
VOCATIONAL	6	14,08 159	13,26 92	9.82 126	11,54 63	12,33 441
OTHER	7	35,26 29	33,18 69	45.69 40	12,28 39	31,75 177
COLUMN TOTAL		52,38 2465	42,23 2632	32.46 3523	17.59 3983	33,70 12603

TABLE A-3

Percent of 1972-73 Entering Full-Time Freshmen Receiving Term-Time Earnings by Family Income Quartile and Institution Type and Control

	MEAN COUNT	FAMILY INCOME				
INST TYPE		UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	OVER $15,000 4	ROW TOTAL
PUBLIC 4-YEAR	1	30,53 1025	23,68 1082	17.26 1460	15,36 1860	20,40 5427
PUBLIC 2-YEAR	2	32,17 713	36,02 679	25.48 930	15,90 729	27,10 3051
PRIVATE 4-YEAR	3	41,59 350	31,71 510	33.19 714	14,89 1078	26,57 2651
PRIVATE 2-YEAR	4	15,86 39	11,56 42	14.67 58	9,74 110	12,16 248
PROFIT-MAKING	5	18,30 149	25,14 158	30.67 196	23,84 105	25,02 608
VOCATIONAL	6	17,76 159	13,65 92	16.03 126	18,02 63	16,44 441
OTHER	7	13,29 29	22,87 69	25.90 40	19,89 39	21,31 177
COLUMN TOTAL		30,57 2465	27,94 2632	23.41 3523	15,48 3983	23,25 12603

TABLE A-4

Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Family Income Quartile and Institution Type and Control

		FAMILY INCOME				
	MEAN COUNT	UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	OVER $15,000 4	ROW TOTAL
INST TYPE						
PUBLIC 4-YEAR	1	39,63	29,85	19.75	5,34	20,58
		1025	1082	1460	1860	5427
PUBLIC 2-YEAR	2	16,71	7,71	3.96	1,79	7,25
		713	679	930	729	3051
PRIVATE 4-YEAR	3	52,50	53,15	41.65	15,49	34,66
		350	510	714	1078	2651
PRIVATE 2-YEAR	4	38,39	7,99	17.62	18,90	19,85
		39	42	58	110	248
PROFIT-MAKING	5	53,46	42,09	35.36	25,16	39,79
		149	158	196	105	608
VOCATIONAL	6	23,50	6,69	15.16	13,44	16,15
		159	92	126	63	441
OTHER	7	41,15	31,33	3.63	21,88	24,67
		29	69	40	39	177
COLUMN TOTAL		34,62	28,26	20.50	8,62	21,13
		2465	2632	3523	3983	12603

TABLE A-5

Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Family Income Quartile and Institution Type and Control

		FAMILY INCOME				
INST TYPE	MEAN COUNT	UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 $15,000 3	OVER $15,000 4	ROW TOTAL
PUBLIC 4-YEAR	1	10,85 1025	4,24 1082	4.98 1460	1,80 1860	4,85 5427
PUBLIC 2-YEAR	2	12,46 713	8,68 679	3.73 930	2,09 729	6,48 3051
PRIVATE 4-YEAR	3	10,43 350	3,83 510	3.04 714	2,09 1078	3,78 2651
PRIVATE 2-YEAR	4	22,59 39	13,65 42	0.00 58	0,00 110	5,85 248
PROFIT-MAKING	5	13,66 149	4,07 158	1.69 196	1,09 105	5,14 608
VOCATIONAL	6	11,93 159	6,07 92	1.85 126	1,68 63	6,35 441
OTHER	7	0,00 29	1,83 69	0.00 40	2,68 39	1,30 177
COLUMN TOTAL		11,55 2465	5,45 2632	3.82 3523	1,87 3983	5,06 12603

TABLE A-6

Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Achievement/Ability Group and Institution Type and Control

SAT SCORE

MEAN COUNT	UNDER 800 1	800 - 950 2	950- 1,100 3	OVER 1,100 4	ROW TOTAL
INST TYPE					
1 PUBLIC 4-YEAR	54,82 1968	50,97 1396	49.86 1722	57,63 1352	53,25 6439
2 PUBLIC 2-YEAR	46,33 2476	48,84 640	51.44 415	44,78 153	47,20 3684
3 PRIVATE 4-YEAR	66,16 836	57,27 599	58.64 789	68,83 916	63,35 3140
4 PRIVATE 2-YEAR	52,52 157	71,58 87	30.07 45	50,55 24	54,46 313
5 PROFIT-MAKING	62,74 566	52,47 111	68.05 29	82,88 48	62,71 755
6 VOCATIONAL	44,25 444	38,80 71	45.36 40	58,42 11	43,92 565
7 OTHER	45,81 106	72,68 52	50.40 23	100,00 14	57,42 195
COLUMN TOTAL	52,83 6553	52,54 2956	52.17 3063	61,58 2518	54,10 15090

TABLE A-7

Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Achievement/Ability Group and Institution Type and Control

SAT SCORE

MEAN COUNT		UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
INST TYPE						
PUBLIC 4-YEAR	1	31,49 1968	30,90 1396	33.42 1722	43,49 1352	34,40 6439
PUBLIC 2-YEAR	2	20,20 2476	18,82 640	31.42 415	32,86 153	21,75 3684
PRIVATE 4-YEAR	3	43,74 836	44,83 599	46.64 789	54,20 916	47,73 3140
PRIVATE 2-YEAR	4	30,61 157	50,57 87	30.07 45	39,67 24	36,77 313
PROFIT-MAKING	5	12,90 566	21,76 11	36.50 29	31,33 48	16,29 755
VOCATIONAL	6	12,48 444	14,25 71	18.21 40	34,99 11	13,54 565
OTHER	7	14,33 106	44,59 52	24.64 23	89,81 14	29,06 195
COLUMN TOTAL		25,59 6553	31,18 2956	36.27 3063	46,70 2518	32,38 15090

TABLE A-8

Percent of 1972-73 Entering Full-Time Freshmen
Receiving Term-Time Earnings by Achievement/Ability Group
and Institution Type and Control

```
                                          SAT SCORE
                    MEAN I
                   COUNT I UNDER        800 -          950 -         OVER
                         I   800        950           1,100          1,100              ROW
                         I                                                              TOTAL
                         I          1 I          2 I          3 I          4 I
INST TYPE        --------I------------I------------I------------I------------I
                       1 I      23,06 I      16,80 I      16.36 I      20,38 I        19,35
  PUBLIC 4-YEAR          I      1968  I      1396  I      1722  I      1352  I        6439
                        -I------------I------------I------------I------------I
                       2 I      27,05 I      25,24 I      27.54 I      13,88 I        26,25
  PUBLIC 2-YEAR          I      2476  I       640  I       415  I       153  I        3684
                        -I------------I------------I------------I------------I
                       3 I      28,52 I      26,55 I      23.69 I      24,32 I        25,70
  PRIVATE 4-YEAR         I       836  I       599  I       789  I       916  I        3140
                        -I------------I------------I------------I------------I
                       4 I      17,40 I      13,39 I      10.24 I      18,35 I        15,33
  PRIVATE 2-YEAR         I       157  I        87  I        45  I        24  I         313
                        -I------------I------------I------------I------------I
                       5 I      20,10 I      26,95 I      33.14 I      37,96 I        22,75
  PROFIT-MAKING          I       566  I       111  I        29  I        48  I         755
                        -I------------I------------I------------I------------I
                       6 I      16,64 I      12,17 I      30.14 I      23,43 I        17,16
  VOCATIONAL             I       444  I        71  I        40  I        11  I         565
                        -I------------I------------I------------I------------I
                       7 I      24,27 I       8,47 I      34.28 I      52.78 I        23,31
  OTHER                  I       106  I        52  I        23  I        14  I         195
                        -I------------I------------I------------I------------I
     COLUMN TOTAL               24,46        20,63        20.15        21,93          22,41
                                6553         2956         3063         2518           15090
```

TABLE A-9

Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Achievement/Ability Group and Institution Type and Control

SAT SCORE

INST TYPE	MEAN COUNT	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
PUBLIC 4-YEAR	1	23,08 1968	20,30 1396	17.67 1722	16.36 1352	19,62 6439
PUBLIC 2-YEAR	2	7,24 2476	9,80 640	8.60 415	2,85 153	7,66 3684
PRIVATE 4-YEAR	3	33,35 836	36,67 599	31.88 789	34,97 916	34,08 3140
PRIVATE 2-YEAR	4	21,96 157	21,38 87	8.99 45	7,47 24	18,83 313
PROFIT-MAKING	5	37,84 566	29,00 111	30.43 29	40.06 48	36,39 755
VOCATIONAL	6	14,81 444	18,23 71	2.96 40	34,99 11	14,81 565
OTHER	7	14,95 106	43,80 52	10.78 23	10.19 14	21,77 195
COLUMN TOTAL		18,97 6553	22,06 2956	19.85 3063	22,72 2518	20,38 15090

TABLE A-10

Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Achievement/Ability Group and Institution Type and Control

	MEAN COUNT	SAT SCORE UNDER 800 1	 800 - 950 2	 950 - 1,100 3	 OVER 1,100 4	ROW TOTAL
INST TYPE						
PUBLIC 4-YEAR	1	5,98 1968	5,78 1396	4.23 1722	3.27 1352	4,90 6439
PUBLIC 2-YEAR	2	6,33 2476	6,28 640	6.26 415	2.21 153	6,14 3684
PRIVATE 4-YEAR	3	5,17 836	2,66 599	3.03 789	4,16 916	3,86 3140
PRIVATE 2-YEAR	4	4,47 157	8,95 87	6.05 45	0,00 24	5,60 313
PROFIT-MAKING	5	5,44 566	2,00 111	11.01 29	0,00 48	4,81 755
VOCATIONAL	6	7,44 444	3,31 71	5.37 40	0,00 11	6,63 565
OTHER	7	0,98 106	2,44 52	0.00 23	0,00 14	1,18 195
COLUMN TOTAL		5,94 6553	5,09 2956	4.27 3063	3,40 2518	5,01 15090

TABLE A-11

Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Racial/Ethnic Group and Institution Type and Control

RACIAL/ETHNIC GROUP

INST TYPE	MEAN COUNT	WHITE 1	BLACK 2	HISPANIC 3	OTHER 4	ROW TOTAL
PUBLIC 4-YEAR	1	51,04 5575	69,23 482	82.15 123	52,20 219	53,04 6399
PUBLIC 2-YEAR	2	45,49 3153	57,12 193	57.03 172	54,10 152	47,00 3671
PRIVATE 4-YEAR	3	60,90 2802	86,51 174	65.27 33	85,51 104	63,20 3112
PRIVATE 2-YEAR	4	55,14 297	50,66 6	100.00 1	30,36 8	54,52 312
PROFIT-MAKING	5	60,73 638	79,70 77	92.12 17	47,65 30	62,85 762
VOCATIONAL	6	44,11 501	49,65 37	0.00 1	44,14 25	44,38 564
OTHER	7	56,68 171	47,77 13	82.13 6	49.24 2	56,71 192
COLUMN TOTAL		52,18 13136	69,57 982	68.58 353	58,19 540	53,92 15012

TABLE A-12

Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Racial/Ethnic Group and Institution Type and Control

RACIAL/ETHNIC GROUP

INST TYPE	MEAN COUNT	WHITE 1	BLACK 2	HISPANIC 3	OTHER 4	ROW TOTAL
PUBLIC 4-YEAR	1	32,65 5575	46,00 482	57.13 123	35,31 219	34,22 6399
PUBLIC 2-YEAR	2	21,12 3153	25,64 193	32.21 172	23,57 152	21,98 3671
PRIVATE 4-YEAR	3	45,12 2802	70,36 174	62.13 33	73,05 104	47,64 3112
PRIVATE 2-YEAR	4	34,74 297	50,66 6	100.00 1	30,36 8	35,13 312
PROFIT-MAKING	5	17,53 638	6,16 77	0.00 17	21,47 30	16,13 762
VOCATIONAL	6	13,03 501	6,15 37	0.00 1	35,82 25	13,57 564
OTHER	7	30,48 171	26,38 13	82.13 6	0,00 2	31,31 192
COLUMN TOTAL		31,08 13136	41,45 982	42.93 353	38,32 540	32,30 15012

TABLE A-13

Percent of 1972-73 Entering Full-Time Freshmen Receiving Term-Time Earnings by Racial/Ethnic Group and Institution Type and Control

	MEAN COUNT	RACIAL/ETHNIC GROUP				
INST TYPE		WHITE 1	BLACK 2	HISPANIC 3	OTHER 4	ROW TOTAL
PUBLIC 4-YEAR	1	17,80 5575	33,06 482	25.29 123	25,99 219	19,37 6399
PUBLIC 2-YEAR	2	24,43 3153	35,60 193	34.86 172	42,59 152	26,26 3671
PRIVATE 4-YEAR	3	25,95 2802	34,66 174	7.54 33	13,12 104	25,81 3112
PRIVATE 2-YEAR	4	13,53 297	25,08 6	0.00 1	0,00 8	13,38 312
PROFIT-MAKING	5	23,18 638	24,84 77	0.00 17	19,57 30	22,67 762
VOCATIONAL	6	17,71 501	16,75 37	0.00 1	8,33 25	17,19 564
OTHER	7	23,48 171	9,16 13	0.00 6	49.24 2	22,13 192
COLUMN TOTAL		21,36 13136	32,21 982	26.51 353	26,71 540	22,39 15012

TABLE A-14

Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Racial/Ethnic Group and Institution Type and Control

RACIAL/ETHNIC GROUP

MEAN COUNT	WHITE 1	BLACK 2	HISPANIC 3	OTHER 4	ROW TOTAL
INST TYPE					
1 PUBLIC 4-YEAR	17,54 5575	39,18 482	43.91 123	11,11 219	19,46 6399
2 PUBLIC 2-YEAR	7,10 3153	11,82 193	7.32 172	6,10 152	7,32 3671
3 PRIVATE 4-YEAR	32,20 2802	51,81 174	43.64 33	53.40 104	34,12 3112
4 PRIVATE 2-YEAR	19,01 297	25,08 6	100.00 1	0,00 8	18,86 312
5 PROFIT-MAKING	31,72 638	62,71 77	92.12 17	35,96 30	36,39 762
6 VOCATIONAL	14,78 501	29,84 37	0.00 1	0,00 25	15,07 564
7 OTHER	19,38 171	31,14 13	51.24 6	0,00 2	20,88 192
COLUMN TOTAL	18,80 13136	37,32 982	28.52 353	18,49 540	20,23 15012

TABLE A-15

Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Racial/Ethnic Group and Institution Type and Control

INST TYPE	MEAN COUNT	RACIAL/ETHNIC GROUP WHITE 1	BLACK 2	HISPANIC 3	OTHER 4	ROW TOTAL
PUBLIC 4-YEAR	1	4,91 5575	5,24 482	6.33 123	3,75 219	4,92 6399
PUBLIC 2-YEAR	2	5,98 3153	8,68 193	9.05 172	0,58 152	6,04 3671
PRIVATE 4-YEAR	3	3,60 2802	7,10 174	8.22 33	0,98 104	3,75 3112
PRIVATE 2-YEAR	4	7,12 297	25,59 6	0.00 1	0,00 8	7,29 312
PROFIT-MAKING	5	5,03 638	7,44 77	0.00 17	5,02 30	5,16 762
VOCATIONAL	6	7,63 501	0,00 37	0.00 1	0,00 25	6,78 564
OTHER	7	1,35 171	0,00 3	0.00 6	0.00 2	1,20 192
COLUMN TOTAL		5,00 13136	6,28 982	7.39 353	2,15 540	5,04 15012

TABLE A-16

Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Median Family Income at Postsecondary Institution and Institution Type and Control

```
                           MEDIAN FAMILY INCOME

                MEAN I UNDER        $ 7,500 -     $10,500 -
               COUNT I $  7,500     $10,500       $15,000          ROW
                     I                                             TOTAL
                     I        1  I         2  I          3  I
INST TYPE   ---------I-----------I------------I-------------I
                   1 I    59,74  I     53,46  I      50.93  I     53,73
  PUBLIC 4-YEAR      I    863    I     2721   I      1591   I     5175
                    -I-----------I------------I-------------I
                   2 I    55,04  I     45,75  I      45.81  I     48,81
  PUBLIC 2-YEAR      I    1015   I     1951   I      118    I     3085
                    -I-----------I------------I-------------I
                   3 I    74,14  I     67,49  I      60.08  I     63,97
  PRIVATE 4-YEAR     I    260    I     994    I      1579   I     2834
                    -I-----------I------------I-------------I
                   4 I    30,79  I     61,76  I      72.11  I     56,01
  PRIVATE 2-YEAR     I    67     I     175    I      43     I     285
                    -I-----------I------------I-------------I
                   5 I    67,81  I     66,53  I      45.39  I     66,38
  PROFIT-MAKING      I    169    I     147    I      13     I     329
                    -I-----------I------------I-------------I
                   6 I    38,95  I     36,88  I      0.00   I     38,54
  VOCATIONAL         I    135    I     34     I      0      I     169
                    -I-----------I------------I-------------I
                   7 I    70,82  I     24,07  I      31.32  I     32,61
  OTHER              I    6      I     28     I      8      I     42
                    -I-----------I------------I-------------I
    COLUMN TOTAL          58,01        53,61         55.27          55.00
                          2517         6051          3353           11920
```

TABLE A-17

Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Median Family Income at Postsecondary Institution and Institution Type and Control

		MEDIAN FAMILY INCOME			
	MEAN COUNT	UNDER $ 7,500	$ 7,500 - $10,500	$10,500 - $15,000	ROW TOTAL
INST TYPE		1	2	3	
PUBLIC 4-YEAR	1	32,95 863	34,40 2721	35.65 1591	34,54 5175
PUBLIC 2-YEAR	2	27,82 1015	21,29 1951	16.49 118	23.25 3085
PRIVATE 4-YEAR	3	55,03 260	51,23 994	47.22 1579	49,35 2834
PRIVATE 2-YEAR	4	21,21 67	38,29 175	53.96 43	36,62 285
PROFIT-MAKING	5	13,65 169	20,09 147	0.20 13	16,01 329
VOCATIONAL	6	4,24 135	6,86 34	0.00 0	4,77 169
OTHER	7	0,00 6	20,32 28	31.32 8	19,36 42
COLUMN TOTAL		29,93 2517	32,48 6051	40.52 3353	34,20 11920

TABLE A-18

Percent of 1972-73 Entering Full-Time Freshmen Receiving Term-Time Earnings by Median Family Income at Postsecondary Institution and Institution Type and Control

MEDIAN FAMILY INCOME

INST	MEAN COUNT	UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	ROW TOTAL
PUBLIC 4-YEAR	1	25,52 863	19,[illegible] 2721	17.07 1591	19,58 5175
PUBLIC 2-YEAR	2	29,16 1015	25,44 1951	30,97 118	26,88 3085
PRIVATE 4-YEAR	3	37,94 260	29,43 994	20,72 1579	25.36 2834
PRIVATE 2-YEAR	4	1,38 67	15,91 175	38.43 43	15,88 285
PROFIT-MAKING	5	16,82 169	21,53 147	21.28 13	19,10 329
VOCATIONAL	6	31,54 135	27,22 34	0.00 0	30,67 169
OTHER	7	70,82 6	15,43 28	0.00 8	20,88 42
COLUMN TOTAL		27,48 2517	22,87 6051	19.53 3353	22.90 11920

TABLE A-19

Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Median Family Income at Postsecondary Institution and Institution Type and Control

MEDIAN FAMILY INCOME

MEAN COUNT		UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	ROW TOTAL
INST TYPE					
PUBLIC 4-YEAR	1	24,26 863	19,44 2721	19.91 1591	20.39 5175
PUBLIC 2-YEAR	2	9,57 1015	8,35 1951	1.46 118	8.49 3085
PRIVATE 4-YEAR	3	37,47 260	38,77 994	33.45 1579	35,69 2834
PRIVATE 2-YEAR	4	6,80 67	23,20 175	28.80 43	20.17 285
PROFIT-MAKING	5	53,83 169	46,77 147	45.39 13	50.34 329
VOCATIONAL	6	8,89 135	3,53 34	0.00 0	7,75 169
OTHER	7	0,00 6	3,82 28	15.69 8	5.55 42
COLUMN TOTAL		20,33 2517	19,65 6051	25.84 3353	21,53 11920

TABLE A-20

Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Median Family Income at Postsecondary Institution and Institution Type and Control

MEDIAN FAMILY INCOME

INST TYPE	MEAN COUNT	UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	ROW TOTAL
PUBLIC 4-YEAR	1	4,35 863	5,07 2721	5.09 1591	4,96 5175
PUBLIC 2-YEAR	2	7,81 1015	5,81 1951	5.48 118	6.45 3085
PRIVATE 4-YEAR	3	5,67 260	4,99 994	2.58 1579	3.71 2834
PRIVATE 2-YEAR	4	4,17 67	7,46 175	6.27 43	6,50 285
PROFIT-MAKING	5	5,97 169	3,86 147	0.00 13	4.80 329
VOCATIONAL	6	5,06 135	6,13 34	0.00 0	5,27 169
OTHER	7	0,00 6	3,75 28	0.00 8	2.45 42
COLUMN TOTAL		6,01 2517	5,33 6051	3.91 3353	5.08 11920

TABLE A-21

Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Median Freshmen Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

MEDIAN SAT SCORE

INST TYPE	MEAN COUNT	UNDER 800 1	800 - 950 2	950 1,100 3	OVER 1,100 4	ROW TOTAL
PUBLIC 4-YEAR	1	55,54 656	56,08 1101	50.56 3877	60,00 832	53,22 6466
PUBLIC 2-YEAR	2	42,85 334	47,89 3348	34.58 60	0,00 0	47,22 3742
PRIVATE 4-YEAR	3	61,24 161	64,52 518	62.86 1623	64,31 849	63,44 3151
PRIVATE 2-YEAR	4	57,98 24	55,11 271	51.82 25	0,00 0	55,07 320
PROFIT-MAKING	5	61,57 712	70,93 26	90.72 28	0,00 0	62,94 766
VOCATIONAL	6	46,15 511	26,15 60	0.00 0	0,00 0	44,05 571
OTHER	7	59,17 175	26,66 16	100.00 8	0,00 0	58,14 199
COLUMN TOTAL		54,33 2573	51,36 5340	54.21 5621	62,18 1681	54,11 15215

Table A-22

Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Median Freshman Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

MEDIAN SAT SCORE

INST TYPE	MEAN COUNT	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
PUBLIC 4-YEAR	1	36,22	34,80	32.28	42,26	34,39
		656	1101	3877	832	6466
PUBLIC 2-YEAR	2	14,03	22,46	27.16	0,00	21,79
		334	3348	60	0	3742
PRIVATE 4-YEAR	3	37,59	40,10	49.45	51,55	47,87
		161	518	1623	849	3151
PRIVATE 2-YEAR	4	26,27	35,63	51.82	0,00	36,17
		24	271	25	0	320
PROFIT-MAKING	5	15,18	25,45	29.74	0,00	16,06
		712	26	28	0	766
VOCATIONAL	6	13,75	10,41	0.00	0,00	13,40
		511	60	0	0	571
OTHER	7	30,30	20,18	50.33	0,00	30,27
		175	16	8	0	199
COLUMN TOTAL		22,64	27,26	37.28	46,95	32,36
		2573	5340	5621	1681	15215

TABLE A-23

Percent of 1972-73 Entering Full-Time Freshmen Receiving Term-Time Earnings by Median Freshman Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

MEDIAN SAT SCORE

MEAN COUNT		UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
INST TYPE						
PUBLIC 4-YEAR	1	23,11 656	18,08 1101	18.52 3877	21.31 832	19,27 6466
PUBLIC 2-YEAR	2	24,32 334	26,69 3348	13.85 60	0,00 0	26,28 3742
PRIVATE 4-YEAR	3	36,44 161	31,62 518	25.69 1623	20.33 849	25,77 3151
PRIVATE 2-YEAR	4	10,78 24	14,93 271	19.51 25	0,00 0	14,97 320
PROFIT-MAKING	5	20,22 712	45,83 26	60.98 28	0,00 0	22,56 766
VOCATIONAL	6	17,04 511	16,38 60	0.00 0	0,00 0	16,97 571
OTHER	7	23,59 175	26,66 16	0.00 8	0,00 0	22,92 199
CCLUMN TOTAL		22,01 2573	24,78 5340	20.73 5621	20,82 1681	22,38 15215

TABLE A-24

Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Median Freshman Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

MEDIAN SAT SCORE

INST TYPE	MEAN COUNT	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
PUBLIC 4-YEAR	1	23,15 656	19,60 1101	18.04 3877	24.14 832	19,61 6466
PUBLIC 2-YEAR	2	4,21 334	7,98 3348	6.97 60	0,00 0	7,62 3742
PRIVATE 4-YEAR	3	28,92 161	30,57 518	33.77 1623	37,62 849	34,03 3151
PRIVATE 2-YEAR	4	6,51 24	20,18 271	10.35 25	0,00 0	18,38 320
PROFIT-MAKING	5	35,88 712	21,63 26	69.51 28	0,00 0	36,61 766
VOCATIONAL	6	16,65 511	1,99 60	0.00 0	0.00 0	15,11 571
OTHER	7	22,02 175	0,00 16	66.30 8	0.00 0	21,98 199
COLUMN TOTAL		23,05 2573	13,16 5340	22.75 5621	30,95 1681	20,34 15215

TABLE A-25

Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Median Freshman Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

MEDIAN SAT SCORE

INST TYPE	MEAN COUNT	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
PUBLIC 4-YEAR	1	6,15 656	6,29 1101	4.33 3877	4,76 832	4,91 6466
PUBLIC 2-YEAR	2	7,47 334	6,17 3348	0.00 60	0,00 0	6,19 3742
PRIVATE 4-YEAR	3	7,40 161	6,16 518	3.82 1623	1,81 849	3,85 3151
PRIVATE 2-YEAR	4	28,97 24	5,79 271	0.00 25	0,00 0	7,10 320
PROFIT-MAKING	5	5,52 712	0,00 26	0.00 28	0,00 0	5,13 766
VOCATIONAL	6	6,22 511	10,73 60	0.00 0	0,00 0	6,69 571
OTHER	7	0,72 175	6,48 16	0.00 8	0,00 0	1,16 199
COLUMN TOTAL		6,09 2573	6,20 5340	4.09 5621	3,27 1681	5,28 15215

TABLE A-26

Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Institution Tuition Dependence and Institution Type and Control

		TUITION AS SHARE OF INSTRUCTIONAL BUDGET			
INST TYPE	MEAN COUNT	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	51,05 1233	53,52 4336	62.62 323	53,50 5892
PUBLIC 2-YEAR	2	44,56 2257	54,23 959	56.55 212	48,01 3428
PRIVATE 4-YEAR	3	69,48 22	64,94 414	63.64 2641	63,86 3077
PRIVATE 2-YEAR	4	0,00 0	64,16 50	52.63 256	54,51 306
PROFIT-MAKING	5	0,00 0	100,00 4	64.11 302	64,56 305
VOCATIONAL	6	23,01 36	58,32 13	40.98 130	38,58 178
OTHER	7	20,08 5	25,89 5	34.94 38	32,38 48
COLUMN TOTAL		46,71 3553	54,57 5781	61.45 3901	54,49 13235

TABLE A-27

Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Institution Tuition Dependence and Institution Type and Control

TUITION AS SHARE OF INSTRUCTIONAL BUDGET

INST TYPE		MEAN COUNT	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1		31,44	35,08	39.64	34,57
			1233	4336	323	5892
PUBLIC 2-YEAR	2		19,17	28,14	30.85	22,40
			2257	959	212	3428
PRIVATE 4-YEAR	3		30,11	45,52	49.11	48,50
			22	414	2641	3077
PRIVATE 2-YEAR	4		0,00	64,16	31.06	36,46
			0	50	256	306
PROFIT-MAKING	5		0,00	100,00	15.05	16.10
			0	4	302	305
VOCATIONAL	6		4,91	35,31	4.85	7,03
			36	13	130	178
OTHER	7		0,00	25,89	18.42	17,21
			5	5	38	48
COLUMN TOTAL			23,32	34,97	41.75	33.84
			3553	5781	3901	13235

TABLE A-28

Percent of 1972-73 Entering Full-Time Freshmen Receiving Term-Time Earnings by Institution Tuition Dependence and Institution Type and Control

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                         TUITION AS SHARE OF INSTRUCTIONAL
                                     BUDGET

                 MEAN I
                COUNT I UNDER 20     20 TO 60     OVER 60           ROW
                      I PERCENT      PERCENT      PERCENT           TOTAL
                      I         1  I         2  I         3  I
INST TYPE    ---------I------------I------------I------------I
 PUBLIC 4-YEAR     1  I     21,19  I     19,15  I     17.49  I     19.49
                      I      1233  I      4336  I       323  I     5892
                     -I------------I------------I------------I
 PUBLIC 2-YEAR     2  I     26,29  I     27,77  I     25.95  I     26.68
                      I      2257  I       959  I       212  I     3428
                     -I------------I------------I------------I
 PRIVATE 4-YEAR    3  I     27,54  I     32,45  I     24,64  I     25,71
                      I        22  I       414  I      2641  I     3077
                     -I------------I------------I------------I
 PRIVATE 2-YEAR    4  I      0,00  I     32,85  I     11.27  I     14,78
                      I         0  I        50  I       256  I      306
                     -I------------I------------I------------I
 PROFIT-MAKING     5  I      0,00  I      0,00  I     20.20  I     19.95
                      I         0  I         4  I       302  I      305
                     -I------------I------------I------------I
 VOCATIONAL        6  I     14,84  I     35,31  I     33.91  I     30.16
                      I        36  I        13  I       130  I      178
                     -I------------I------------I------------I
 OTHER             7  I     20,28  I      0,00  I     20.80  I     18,55
                      I         5  I         5  I        38  I       48
                     -I------------I------------I------------I
      COLUMN TOTAL          24,40        21,66        23.17        22,84
                             3553         5781         3901        13235
```

TABLE A-29

Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Institution Tuition Dependence and Institution Type and Control

	MEAN COUNT	TUITION AS SHARE OF INSTRUCTIONAL BUDGET			
INST TYPE		UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	16,20	20,90	25.67	20.17
		1233	4336	323	5892
PUBLIC 2-YEAR	2	6,31	11,81	6.07	7,83
		2257	959	212	3428
PRIVATE 4-YEAR	3	25,98	31,84	34.99	34.50
		22	414	2641	3077
PRIVATE 2-YEAR	4	0,00	15,58	19.41	18,78
		0	50	256	306
PROFIT-MAKING	5	0,00	0,00	48.32	47,72
		0	4	302	305
VOCATIONAL	6	0,00	9,42	9.19	7.35
		36	13	130	178
OTHER	7	0,00	0.00	10.59	8.34
		5	5	38	48
COLUMN TOTAL		9,79	20,07	31.55	20,70
		3553	5781	3901	13235

TABLE A-30

Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Institution Tuition Dependence and Institution Type and Control

```
                          TUITION AS SHARE OF INSTRUCTIONAL
                                        BUDGET

                   MEAN I
                  COUNT I UNDER 20      20 TO 60     OVER 60             ROW
                        I PERCENT       PERCENT      PERCENT             TOTAL
                        I          1 I          2 I          3 I
INST TYPE       --------I------------I------------I------------I
 PUBLIC 4-YEAR        1 I       4,90 I       4,54 I       7.26 I        4,77
                        I       1233 I       4336 I        323 I        5892
                       -I------------I------------I------------I
 PUBLIC 2-YEAR        2 I       6,65 I       5,09 I       9.85 I        6,41
                        I       2257 I        959 I        212 I        3428
                       -I------------I------------I------------I
 PRIVATE 4-YEAR       3 I      14,15 I       4,39 I       3.60 I        3,78
                        I         22 I        414 I       2641 I        3077
                       -I------------I------------I------------I
 PRIVATE 2-YEAR       4 I       0,00 I       0,00 I       7.23 I        6,05
                        I          0 I         50 I        256 I         306
                       -I------------I------------I------------I
 PROFIT-MAKING        5 I       0,00 I       0,00 I       4.79 I        4,73
                        I          0 I          4 I        302 I         305
                       -I------------I------------I------------I
 VOCATIONAL           6 I      13,28 I      13,59 I       3.24 I        5,97
                        I         36 I         13 I        130 I         178
                       -I------------I------------I------------I
 OTHER                7 I      20,28 I       0,00 I       0.00 I        2,17
                        I          5 I          5 I         38 I          48
                       -I------------I------------I------------I
     COLUMN TOTAL              6,17         4,60         4.53           5,00
                               3553         5781         3901          13235
```

TABLE A-31

Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Institution Dependence on Government Revenue and Institution Type and Control

INST TYPE	MEAN COUNT	GOVERNMENT REVENUE AS SHARE OF INSTRUCTIONAL BUDGET UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	62,62 323	53,33 919	52.91 4650	53,50 5892
PUBLIC 2-YEAR	2	59,47 174	36,04 102	47.76 3152	48,01 3428
PRIVATE 4-YEAR	3	63,84 3025	74,81 39	35.22 13	63,86 3077
PRIVATE 2-YEAR	4	53,72 301	100,00 5	0.00 0	54,51 306
PROFIT-MAKING	5	64,11 302	0,00 0	100.00 4	64,56 305
VOCATIONAL	6	40,98 130	0,00 0	32.21 49	38,58 178
OTHER	7	34,94 38	0,00 4	36.05 6	32,38 48
COLUMN TOTAL		61,94 4292	52,50 1068	50.70 7874	54,49 13235

TABLE A-32

Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Institution Dependence on Government Revenue and Institution Type and Control

GOVERNMENT REVENUE AS SHARE OF INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	39,64 323	39,01 919	33.34 4650	34,57 5892
PUBLIC 2-YEAR	2	33,22 174	16,19 102	22.00 3152	22,40 3428
PRIVATE 4-YEAR	3	48,63 3025	46,61 39	23.17 13	48,50 3077
PRIVATE 2-YEAR	4	35,81 301	74,05 5	0.00 0	36,46 306
PROFIT-MAKING	5	15,25 302	0,00 0	100.00 4	16,10 305
VOCATIONAL	6	4,85 130	0,00 0	12.82 49	7,03 178
OTHER	7	18,42 38	0,00 4	19.98 6	17,21 48
COLUMN TOTAL		42,48 4292	37,15 1068	28.68 7874	33.84 13235

TABLE A-33

Percent of 1972-73 Entering Full-Time Freshmen Receiving Term-Time Earnings by Institution Dependence on Government Revenue and Institution Type and Control

```
                                GOVERNMENT REVENUE AS SHARE OF
                                    INSTRUCTIONAL BUDGET

                        MEAN I UNDER 20      20 TO 60      OVER 60
                       COUNT I PERCENT       PERCENT       PERCENT          ROW
                             I                                              TOTAL
                             I          1 I          2 I          3 I
INST TYPE           --------I-----------I-----------I-----------I
  PUBLIC 4-YEAR          1  I     17,49 I     16,77 I     20.17 I      19,49
                            I     323   I     919   I     4650  I      5892
                           -I-----------I-----------I-----------I
  PUBLIC 2-YEAR          2  I     30,22 I      9,97 I     27.03 I      26,68
                            I     174   I     102   I     3152  I      3428
                           -I-----------I-----------I-----------I
  PRIVATE 4-YEAR         3  I     25,66 I     38,52 I      0.00 I      25,71
                            I     3025  I      39   I      13   I      3077
                           -I-----------I-----------I-----------I
  PRIVATE 2-YEAR         4  I     15,04 I      0,00 I      0.00 I      14,78
                            I     301   I       5   I       0   I       306
                           -I-----------I-----------I-----------I
  PROFIT-MAKING          5  I     20,20 I      0,00 I      0.00 I      19,95
                            I     302   I       0   I       4   I       305
                           -I-----------I-----------I-----------I
  VOCATIONAL             6  I     33,91 I      0,00 I     20.17 I      30,16
                            I     130   I       0   I      49   I       178
                           -I-----------I-----------I-----------I
  OTHER                  7  I     20,80 I      0,00 I     16.07 I      18,55
                            I      38   I       4   I       6   I        48
                           -I-----------I-----------I-----------I
        COLUMN TOTAL             24,31       16,77       22.87         22,84
                                 4292        1068        7874          13235
```

TABLE A-34

Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Institution Dependence on Government Revenue and Institution Type and Control

GOVERNMENT REVENUE AS SHARE OF
INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	25,67 323	23,65 919	19.11 4650	20,17 5892
PUBLIC 2-YEAR	2	7,38 174	4,84 102	7.95 3152	7,83 3428
PRIVATE 4-YEAR	3	34,66 3025	21,38 39	35.22 13	34,50 3077
PRIVATE 2-YEAR	4	18,46 301	37,32 5	0.00 0	18,78 306
PROFIT-MAKING	5	48,32 302	0,00 0	0.00 4	47,72 305
VOCATIONAL	6	9,19 130	0,00 0	2.45 49	7,35 178
OTHER	7	10,59 38	0,00 4	0.00 6	8,34 48
COLUMN TOTAL		31,72 4292	21,77 1068	14.54 7874	20,70 13235

TABLE A-35

Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Institution Dependence on Government Revenue and Institution Type and Control

GOVERNMENT REVENUE AS SHARE OF
INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	7,26 323	4,60 919	4.63 4650	4,77 5892
PUBLIC 2-YEAR	2	9,06 174	5,04 102	6.31 3152	6,41 3428
PRIVATE 4-YEAR	3	3,70 3025	3,59 39	23.17 13	3,78 3077
PRIVATE 2-YEAR	4	6,16 301	0,00 5	0.00 0	6,05 306
PROFIT-MAKING	5	4,79 302	0,00 0	0.00 4	4,73 305
VOCATIONAL	6	3,24 130	0,00 0	13.21 49	5,97 178
OTHER	7	0,20 38	0,00 4	16.07 6	2.17 48
COLUMN TOTAL		4,39 4292	4,57 1068	5.39 7874	5,00 13235

TABLE A-36

Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Institution Dependence on Gift and Endowment Income and Institution Type and Control

GIFT AND ENDOWMENT INCOME
AS SHARE OF
INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT	UNDER 10 PERCENT 1	OVER 10 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	53,39 5848	68,58 44	53.50 5892
PUBLIC 2-YEAR	2	47,92 3411	65,07 17	48.01 3428
PRIVATE 4-YEAR	3	61,81 1209	65,19 1868	63.86 3077
PRIVATE 2-YEAR	4	48,69 138	59,30 168	54.51 306
PROFIT-MAKING	5	64,56 305	0,00 0	64.36 305
VOCATIONAL	6	38,58 178	0,00 0	38.58 178
OTHER	7	26,77 42	69,73 6	32.38 48
COLUMN TOTAL		52,54 11131	64,80 2104	54.49 13235

TABLE A-37

Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Institution Dependence on Gift and Endowment Income and Institution Type and Control

GIFT AND ENDOWMENT INCOME
AS SHARE OF
INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT	UNDER 10 PERCENT 1	OVER 10 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	34,31 5848	68,58 44	34.57 5892
PUBLIC 2-YEAR	2	22,36 3411	31,43 17	22.40 3428
PRIVATE 4-YEAR	3	47,28 1209	49,28 1868	48.50 3077
PRIVATE 2-YEAR	4	29,06 138	42,55 168	36.46 306
PROFIT-MAKING	5	16,10 305	0,00 0	16.10 305
VOCATIONAL	6	7,03 178	0,00 0	7.03 178
OTHER	7	16,58 42	21,40 6	17.21 48
COLUMN TOTAL		30,99 11131	48,92 2104	33.84 13235

TABLE A-38

Percent of 1972-73 Entering Full-Time Freshmen Receiving Term-Time Earnings by Institution Dependence on Gift and Endowment Income and Institution Type and Control

GIFT AND ENDOWMENT INCOME
AS SHARE OF
INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT	UNDER 10 PERCENT 1	OVER 10 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	19,58 5848	6,86 44	19.49 5892
PUBLIC 2-YEAR	2	26,76 3411	12,54 17	26.68 3428
PRIVATE 4-YEAR	3	20,28 1209	29,23 1868	25.71 3077
PRIVATE 2-YEAR	4	5,44 138	22,47 168	14.78 306
PROFIT-MAKING	5	19,95 305	0,00 0	19.95 305
VOCATIONAL	6	30,16 178	0,00 0	30.16 178
OTHER	7	14,07 42	48,33 6	18.55 48
COLUMN TOTAL		21,84 11131	28,14 2104	22.84 13235

TABLE A-39

Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Institution Dependence on Gift and Endowment Income and Institution Type and Control

GIFT AND ENDOWMENT INCOME
AS SHARE OF
INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT	UNDER 10 PERCENT 1	OVER 10 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	20,11 5848	28,53 44	20.17 5892
PUBLIC 2-YEAR	2	7,73 3411	28,51 17	7.83 3428
PRIVATE 4-YEAR	3	33,87 1209	34,90 1868	34.50 3077
PRIVATE 2-YEAR	4	16,94 138	20,29 168	18.78 306
PROFIT-MAKING	5	47,72 305	0,00 0	47.72 305
VOCATIONAL	6	7,35 178	0,00 0	7.35 178
OTHER	7	9,59 42	0,00 6	8.34 48
COLUMN TOTAL		18,29 11131	33,45 2104	20.70 13235

TABLE A-40

Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Institution Dependence on Gift and Endowment Income and Institution Type and Control

GIFT AND ENDOWMENT INCOME
AS SHARE OF
INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT	UNDER 10 PERCENT 1	OVER 10 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	4,80 5848	0,00 44	4.77 5892
PUBLIC 2-YEAR	2	6,45 3411	0,00 17	6.41 3428
PRIVATE 4-YEAR	3	2,69 1209	4,49 1868	3.78 3077
PRIVATE 2-YEAR	4	6,38 138	5,78 168	6.05 306
PROFIT-MAKING	5	4,73 305	0,00 0	4.73 305
VOCATIONAL	6	5,97 178	0,00 0	5.97 178
OTHER	7	2,50 42	0,00 6	2.17 48
COLUMN TOTAL		5,10 11131	4,45 2104	5.00 13235

TABLE A-41

Percent of 1972-73 Entering Full-Time Freshmen Receiving Financial Aid by Available Institution Aid Funds and Institution Type and Control

DISCRETIONARY AID FUNDS
AS SHARE OF
STUDENT BUDGET

INST TYPE	MEAN COUNT	UP TO 5 PERCENT 1	OVER 5 PERCENT 2	ROW TOTAL
	1	53,57	53,43	53.48
PUBLIC 4-YEAR		2167	3643	5810
	2	49,47	44,72	48.08
PUBLIC 2-YEAR		2411	1005	3416
	3	59,43	65,73	63.78
PRIVATE 4-YEAR		950	2115	3065
	4	51,28	59,93	54.51
PRIVATE 2-YEAR		192	114	306
	5	65,07	74,16	66.56
PROFIT-MAKING		277	54	331
	6	38,53	59,23	39.04
VOCATIONAL		178	4	183
	7	29,46	30,44	30.01
OTHER		22	29	52
COLUMN TOTAL		52,80	56,08	54.54
		6196	6965	13162

TABLE A-42

Percent of 1972-73 Entering Full-Time Freshmen Receiving Grants or Scholarships by Available Institutional Aid Funds and Institution Type and Control

INST TYPE	MEAN COUNT	DISCRETIONARY AID FUNDS AS SHARE OF STUDENT BUDGET UP TO 5 PERCENT 1	 OVER 5 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	34,95 2167	33,96 3643	34.33 5810
PUBLIC 2-YEAR	2	24,47 2411	17,36 1005	22.38 3416
PRIVATE 4-YEAR	3	42,07 950	51,17 2115	48.35 3065
PRIVATE 2-YEAR	4	35,79 192	37,58 114	36.46 306
PROFIT-MAKING	5	16,07 277	15,17 54	15.92 331
VOCATIONAL	6	7,03 178	0,00 4	6.86 183
OTHER	7	10,53 22	20,10 29	15.95 52
COLUMN TOTAL		30,26 6196	36,62 6965	33.63 13162

TABLE A-43

Percent of 1972-73 Entering Full-Time Freshmen Receiving Term-Time Earnings by Available Institutional Aid Funds and Institution Type and Control

DISCRETIONARY AID FUNDS
AS SHARE OF
STUDENT BUDGET

INST TYPE	MEAN COUNT	UP TO 5 PERCENT 1	OVER 5 PERCENT 2	ROW TOTAL
	1	18,73	20,03	19.55
PUBLIC 4-YEAR		2167	3643	5810
	2	26,46	27,18	26.67
PUBLIC 2-YEAR		2411	1005	3416
	3	20,18	28,13	25.66
PRIVATE 4-YEAR		950	2115	3065
	4	11,33	20,59	14.78
PRIVATE 2-YEAR		192	114	306
	5	15,27	37,96	18.99
PROFIT-MAKING		277	54	331
	6	31,59	0,00	30.82
VOCATIONAL		178	4	183
	7	11,66	21,43	17.19
OTHER		22	29	52
COLUMN TOTAL		21,92	23,66	22.84
		6196	6965	13162

TABLE A-44

Percent of 1972-73 Entering Full-Time Freshmen Receiving Loans by Available Institutional Aid Funds and Institution Type and Control

DISCRETIONARY AID FUNDS
AS SHARE OF
STUDENT BUDGET

INST TYPE	MEAN COUNT	UP TO 5 PERCENT 1	OVER 5 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	21,45 2167	19,29 3643	20.10 5810
PUBLIC 2-YEAR	2	9,14 2411	4,78 1005	7.86 3416
PRIVATE 4-YEAR	3	28,26 950	37,07 2115	34.34 3065
PRIVATE 2-YEAR	4	16,14 192	23,22 114	18.78 306
PROFIT-MAKING	5	48,12 277	63,34 54	50.62 331
VOCATIONAL	6	6,77 178	23,38 4	7.17 183
OTHER	7	17,81 22	0,00 29	7.73 52
COLUMN TOTAL		18,30 6196	22,93 6965	20.75 13162

TABLE A-45

Percent of 1972-73 Entering Full-Time Freshmen Receiving Benefits by Available Institution Aid Funds and Institution Type and Control

DISCRETIONARY AID FUNDS
AS SHARE OF
STUDENT BUDGET

INST TYPE	MEAN COUNT	UP TO 5 PERCENT 1	OVER 5 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	3,38 2167	5,70 3643	4.83 5810
PUBLIC 2-YEAR	2	6,76 2411	5,65 1005	6.44 3416
PRIVATE 4-YEAR	3	3,66 950	3,86 2115	3.80 3065
PRIVATE 2-YEAR	4	6,52 192	5,28 114	6.05 306
PROFIT-MAKING	5	5,71 277	0,00 54	4.77 331
VOCATIONAL	6	5,27 178	35,85 4	5.82 183
OTHER	7	4,64 22	0,00 29	2.01 52
COLUMN TOTAL		4,99 6196	5,08 6965	5.04 13162

Appendix IV-B

Average Amounts of Aid Received by 1972-73 Entering Full-Time Freshman Aid Recipients by Type of Aid, Student/Family or Institution Attribute, and Institution Type and Control

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B-1 Average Total Aid Received by 1972-73 Entering Full-Time Freshmen Aid Recipients by Family Income Quartile and Institution Type and Control

B-2 Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients by Family Income Quartile and Institution Type and Control

B-3 Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Family Income Quartile and Institution Type and Control

B-4 Average Loans Received by 1972-73 Entering Full-Time Freshman Loan Recipients by Family Income Quartile and Institution Type and Control

B-5 Average Benefits Received by 1972-73 Entering Full-Time Freshman Beneficiaries by Family Income Quartile and Institution Type and Control

B-6 Average Total Aid Received by 1972-73 Entering Full-Time Freshman Aid Recipients by Achievement/Ability Group and Institution Type and Control

B-7 Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients by Achievement/Ability Group and Institution Type and Control

B-8 Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Achievement/Ability Group and Institution Type and Control

B-9 Average Loan Received by 1972-73 Entering Full-time Freshman Loan Recipients by Achievement/Ability Group and Institution Type and Control

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B-12 Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients by Racial/Ethnic Group and Institution Type and Control

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B-16 Average Total Aid Received by 1972-73 Entering Full-Time Freshman Aid Recipients by Median Family Income at Postsecondary Institution and Institution Type and Control

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B-18 Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Median Family Income at Postsecondary Institution and Institution Type and Control

B-19 Average Loan Received by 1972-73 Entering Full-Time Freshman Loan Recipients by Median Family Income at Postsecondary Institution and Institution Type and Control

B-20 Average Benefits Received by 1972-73 Entering Full-Time Freshman Beneficiaries by Median Family Income at Postsecondary Institution and Institution Type and Control

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B-22 Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients by Median Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

B-23 Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Median Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

B-24 Average Loan Received by 1972-73 Entering Full-Time Freshman Loan Recipients by Median Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

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B-26 Average Total Aid Received by 1972-73 Entering Full-Time Aid Recipients by Institution Tuition Dependence and Institution Type and Control

B-27 Average Grant or Scholarship Aid Received by 1972-73 Full-Time Freshman Grant Recipients by Institution Tuition Dependence and Institution Type and Control

B-28 Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Institution Tuition Dependence and Institution Type and Control

B-29 Average Loans Received by 1972-73 Entering Full-Time Freshman Loan Recipients by Institution Tuition Dependence and Institution Type and Control

B-30 Average Benefits Received by 1972-73 Entering Full-Time Freshman Beneficiaries by Institution Tuition Dependence and Institution Type and Control

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B-39 Average Loan Received by 1972-73 Entering Full-Time Loan Recipients by Institution Dependence on Gift and Endowment Income and Institution Type and Control

B-40 Average Benefits Received by 1972-73 Entering Full-Time Freshman Beneficiaries by Institution Dependence on Gift and Endowment Income and Institution Type and Control

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B-42 Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients and Available Institutional Aid Funds and Institution Type and Control

B-43 Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Available Institution Aid Funds and Institution Type and Control

B-44 Average Loan Received by 1972-73 Entering Full-Time Freshman Loan Recipients by Available Institution Aid Funds and Institution Type and Control

B-45 Average Benefits Received by 1972-73 Entering Full-Time Freshmen Beneficiaries by Available Institution Aid Funds and Institution Type and Control

TABLE B-1

Average Total Aid Received by 1972-73 Entering Full-Time Freshmen Aid Recipients by Family Income Quartile and Institution Type and Control

FAMILY INCOME

MEAN COUNT STD DEV		UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	OVER $15,000 4	ROW TOTAL
INST TYPE						
PUBLIC 4-YEAR	1	1205,67 841 762,38	946,18 746 853,47	945.06 803 662.53	700,10 615 778,39	968,16 3005 784,18
PUBLIC 2-YEAR	2	791,21 475 669,28	578,46 402 678,45	460.18 414 524.18	485,30 179 637,14	602,56 1471 644,74
PRIVATE 4-YEAR	3	2233,94 312 1172,59	1825,15 416 1117,82	1712.87 508 930.89	1370,13 469 1022,54	1741,18 1705 1088,35
PRIVATE 2-YEAR	4	1469,96 35 1282,95	569,73 22 652,25	749.42 36 624.63	1053,74 44 738,46	1002,86 136 925,34
PROFIT-MAKING	5	1258,74 116 577,76	1258,76 121 725,82	1150.53 126 956.22	1601,79 44 1058,40	1262,58 407 816,91
VOCATIONAL	6	962,31 90 684,20	701,77 31 630,25	921.87 43 831.89	924,73 22 895,38	905,34 186 738,99
OTHER	7	1171,86 21 871,46	1042,56 43 722,40	983.53 22 877.58	960,87 17 896,45	1042,01 104 809,08
COLUMN TOTAL		1267,04 1890 946,16	1083,24 1781 980,56	1051.53 1952 864.86	945,04 1391 934.93	1096,54 7014 937,82

TABLE B-2

Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients by Family Income Quartile and Institution Type and Control

FAMILY INCOME

INST TYPE		MEAN COUNT STD DEV	UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	OVER $15,000 4	ROW TOTAL
PUBLIC 4-YEAR	1	MEAN	784,52	660,71	611.57	631,81	683,60
		COUNT	633	528	496	309	1966
		STD DEV	578,54	872,36	507.07	923.11	717,82
PUBLIC 2-YEAR	2	MEAN	483,69	389,23	368.27	401,53	425,12
		COUNT	293	179	172	41	685
		STD DEV	441,96	315,03	407.68	575,26	415,61
PRIVATE 4-YEAR	3	MEAN	1577,07	1221,84	1021.28	1114.93	1211,40
		COUNT	272	317	387	304	1281
		STD DEV	1160,21	938,46	803.68	857,36	955,84
PRIVATE 2-YEAR	4	MEAN	694,15	250,20	529.17	584,65	528,79
		COUNT	23	18	30	22	94
		STD DEV	449,19	158,16	292.66	260,32	344,18
PROFIT-MAKING	5	MEAN	455,80	619,87	572.09	1288,94	625,33
		COUNT	37	34	28	12	110
		STD DEV	497,15	286,96	528.90	861,39	553,27
VOCATIONAL	6	MEAN	635,79	390,80	265.51	446,21	470,80
		COUNT	22	12	12	7	54
		STD DEV	812,73	202,00	100.91	471,42	570,22
OTHER	7	MEAN	1063,14	796,11	892.89	227,15	828,25
		COUNT	10	23	18	5	56
		STD DEV	694,42	381,20	992.84	50,04	699,15
COLUMN TOTAL		MEAN	872,00	769,05	711.07	833,29	795,34
		COUNT	1291	1112	1144	700	4247
		STD DEV	815,94	853,24	660.81	895,37	804,02

TABLE B-3

Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Family Income Quartile and Institution Type and Control

FAMILY INCOME

MEAN COUNT STD DEV		UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	OVER $15,000 4	ROW TOTAL
INST TYPE						
	1	506,28	395,37	389.79	363,70	417,29
PUBLIC 4-YEAR		313	256	252	286	1107
		396,43	283,70	284.01	325,83	334,39
	2	408,57	394,34	326.50	314,69	367,69
PUBLIC 2-YEAR		229	245	237	116	827
		310,10	556,02	342.30	389,03	417,00
	3	504,55	339,39	519.26	470,12	463,78
PRIVATE 4-YEAR		145	162	237	160	704
		499,52	234,80	505.95	539,08	469,59
	4	1006,07	326,11	411.73	294,68	479,03
PRIVATE 2-YEAR		6	5	8	11	30
		674,44	49,36	139.99	182,07	417,66
	5	451,44	837,14	374.61	775,67	575,33
PROFIT-MAKING		27	40	60	25	152
		353,78	642,59	477.31	656,30	573,45
	6	456,19	471,78	708.90	585,60	549,72
VOCATIONAL		28	13	20	11	73
		336,84	313,96	853.96	659,97	574,93
	7	156,87	277,43	343.21	408,74	309,76
OTHER		4	16	10	8	38
		5,38	236,49	232.20	599,26	327,31
COLUMN TOTAL		474,66	404,96	415.18	402,32	425,20
		754	736	825	617	2931
		398,36	422,72	416.53	436,95	418,75

TABLE B-4

Average Loans Received by 1972-73 Entering Full-Time Freshman Loan Recipients by Family Income Quartile and Institution Type and Control

FAMILY INCOME

MEAN COUNT STD DEV		UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	OVER $15,000 4	ROW TOTAL
INST TYPE						
PUBLIC 4-YEAR	1	695,96	689,36	953.13	1098,74	796,24
		406	323	288	99	1117
		418,56	375,37	455.97	590,95	458,32
PUBLIC 2-YEAR	2	708,06	533,04	815.00	1418.26	726,30
		119	52	37	13	221
		456,34	439,93	555.57	192,43	497,64
PRIVATE 4-YEAR	3	831,87	1093,52	1131.54	1106,52	1055,89
		184	271	297	167	919
		454,79	652,61	599.17	774,56	635,27
PRIVATE 2-YEAR	4	1584,99	626,82	710.86	1446,83	1281,85
		15	3	10	21	49
		1385,09	348,02	452.48	492,13	916,77
PROFIT-MAKING	5	1141,08	1393,68	1477.94	1331.36	1327,76
		80	67	69	26	242
		376,56	489,99	652.04	465.59	523,58
VOCATIONAL	6	1051,47	1500,00	1090.09	1038.66	1099,20
		37	6	19	8	71
		424,55	0,00	379.77	443.10	409,25
OTHER	7	1062,51	994,78	1600.00	1239.11	1080,89
		12	22	1	8	44
		305,92	498,64	0.27	262.41	418,13
COLUMN TOTAL		804,93	903,94	1071.32	1155.51	950,04
		853	744	722	343	2663
		492,11	570,51	566.31	664,07	573,40

TABLE B-5

Average Benefits Received by 1972-73 Entering Full-Time Freshman Beneficiaries by Family Income Quartile and Institution Type and Control

FAMILY INCOME

INST TYPE	MEAN COUNT STD DEV	UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	OVER $15,000 4	ROW TOTAL
PUBLIC 4-YEAR	1	689,87	718,08	1139.54	658,89	814,93
		111	46	73	34	263
		601,23	539,07	739.88	492.93	649,53
PUBLIC 2-YEAR	2	631,75	653,33	569.02	1031,42	657,98
		89	59	35	15	198
		475,54	442,64	417.00	1212,42	554,41
PRIVATE 4-YEAR	3	1103,98	1062,19	700.89	1918.47	1191,94
		36	19	22	23	100
		1013,26	717,15	527.36	1092.13	979,27
PRIVATE 2-YEAR	4	577,00	767,22	0.00	0,00	651,31
		9	6	0	0	15
		437,08	778,18	0.00	0,00	573,98
PROFIT-MAKING	5	1251,24	812,50	1300.00	1000,00	1156,77
		20	6	3	1	31
		519,31	639,58	0.16	0.00	529,71
VOCATIONAL	6	1073,81	296,33	500.00	1400.00	882,68
		19	6	2	1	28
		873,51	209,06	0.08	0,00	797,78
OTHER	7	0,00	500,00	0.00	1980,00	1167,49
		0	1	0	1	2
		0,00	0,12	0.00	1,27	979,04
COLUMN TOTAL		787,06	726,02	914.80	1150,36	842,81
		285	143	135	75	637
		676,32	548,68	672.94	1023.02	709,95

TABLE B-6

Average Total Aid Received by 1972-73 Entering Full-Time Freshman Aid Recipients by Achievement/Ability Group and Institution Type and Control

SAT SCORE

INST TYPE	MEAN COUNT STD DEV	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
PUBLIC 4-YEAR	1	966,58 1079 722,11	958,47 711 656,35	955.28 859 884.45	938,60 779 813.94	955,71 3429 774,34
PUBLIC 2-YEAR	2	623,37 1147 658,45	612,97 313 558,41	637.16 214 668.89	318,41 68 237,98	611,22 1742 633,77
PRIVATE 4-YEAR	3	1546,35 553 964,44	1809,80 343 1107,25	1767.60 463 1129.67	1804,83 631 1209.40	1725,18 1989 1114,11
PRIVATE 2-YEAR	4	978,38 82 786,15	1084,91 62 968,04	1165.27 13 1170.36	970,99 12 792,38	1031,51 170 884,54
PROFIT-MAKING	5	1160,21 355 725,84	1404,67 58 954,23	1675.57 20 922.75	1666,67 40 1099.46	1254,50 473 818,62
VOCATIONAL	6	921,62 196 736,53	834,18 27 510,44	385.78 18 254.32	1411.80 6 888,21	885,92 248 710,69
OTHER	7	867,43 49 908,45	1049,15 38 656,45	707.93 12 525.13	1304,28 14 975,85	966,87 112 814,14
COLUMN TOTAL		961,70 3462 813,41	1098,74 1553 887,92	1150.45 1598 1024.38	1287.77 1550 1091.42	1086,65 8163 936,50

TABLE B-7

Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients by Achievement/Ability Group and Institution Type and Control

SAT SCORE

INST TYPE	MEAN COUNT STD DEV	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
PUBLIC 4-YEAR	1	663,05	653,96	656.76	701.35	669,81
		620	431	576	588	2215
		524,25	516,79	892.11	739,82	693,41
PUBLIC 2-YEAR	2	444,97	448,00	372.03	316.15	425,48
		500	120	130	50	801
		434,61	438,72	289.60	206,24	405,29
PRIVATE 4-YEAR	3	1094,71	1183,86	1112.64	1368,17	1205,71
		366	268	368	497	1499
		822,02	1103,22	913.58	982.96	959,21
PRIVATE 2-YEAR	4	567,86	567,08	586.40	1002,81	605,77
		48	44	13	10	115
		395,62	277,88	525.76	641,25	411,18
PROFIT-MAKING	5	476,96	722,34	306.24	1480,20	632,58
		73	24	11	15	123
		395,63	526,01	193.39	633,55	554,79
VOCATIONAL	6	566,39	381,26	326.97	430,00	512,54
		55	10	7	4	77
		629,73	155,37	313.53	0,05	551,80
OTHER	7	767,53	702,11	687.61	1103,87	808,06
		15	23	6	13	57
		733,11	388,24	229.65	1132,50	704,78
COLUMN TOTAL		679,05	777,27	768.07	982.39	790,83
		1677	921	1111	1176	4885
		624,48	769,05	877.36	910,56	795,56

TABLE B-8

Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Achievement/Ability Group and Institution Type and Control

SAT SCORE

INST TYPE	MEAN COUNT STD DEV	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
PUBLIC 4-YEAR	1	421,35	451,79	410.45	376,96	414,80
		454	235	282	276	1246
		336,76	350,14	354.24	289,38	334,12
PUBLIC 2-YEAR	2	397,48	354,22	314.48	165,55	375,35
		670	162	114	21	967
		444,40	308,07	321.67	101.90	408,28
PRIVATE 4-YEAR	3	558,90	363,48	518.55	381,83	462,17
		238	159	187	223	807
		557,55	311,94	529.93	459,89	490,70
PRIVATE 2-YEAR	4	464,65	289,28	400.00	140,70	386,14
		27	12	5	4	48
		445,20	154,91	0.05	55,87	358,34
PROFIT-MAKING	5	568,77	577,67	1070.26	464.67	587,73
		114	30	10	18	172
		531,59	655,96	810.13	419,53	571,16
VOCATIONAL	6	616,35	624,14	250.09	414,00	564,76
		74	9	12	3	97
		580,88	562,95	175.22	0,05	547,55
OTHER	7	286,01	410,62	246.15	283,97	290,73
		26	4	8	7	46
		376,87	136,36	185.80	250.32	310,71
COLUMN TOTAL		449,85	407,85	430.49	370,73	425,83
		1603	610	617	552	3382
		455,13	355,75	428.62	368,73	421,20

TABLE B-9

Average Loan Received by 1972-73 Entering Full-Time Freshman Loan Recipients by Achievement/Ability Group and Institution Type and Control

SAT SCORE

MEAN COUNT STD DEV	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
INST TYPE					
1 PUBLIC 4-YEAR	779,83 454 466,92	821,60 283 463,12	825.82 304 457.38	763,24 221 422,39	797,37 1263 456,42
2 PUBLIC 2-YEAR	635,44 179 458,36	987,84 63 384,59	984.51 36 668.85	250,00 4 0.03	752,08 282 502,84
3 PRIVATE 4-YEAR	971,04 279 446,05	1046,70 220 583,56	1115.10 251 585.35	1035,81 320 808,63	1039,81 1070 632,05
4 PRIVATE 2-YEAR	1018,53 34 590,72	1935,88 19 1098,86	730.80 4 216.53	900,00 2 0,00	1284,62 59 880,41
5 PROFIT-MAKING	1293,02 214 458,65	1405,52 32 527,03	1736.58 9 1119.02	1850.15 19 767,07	1359,50 275 544,26
6 VOCATIONAL	1104,58 66 391,82	983,22 13 420,33	900.00 1 0.21	1650,00 4 0,21	1108,22 84 403,03
7 OTHER	1328,01 16 309,51	918,80 23 410,40	960.00 3 0.00	1600,00 1 0,27	1096,84 42 412,31
COLUMN TOTAL	921,17 1243 506,59	980,59 652 568,95	968.19 608 562.32	956,87 572 711,34	949,71 3075 573,84

TABLE B-10

Average Benefits Received by 1972-73 Entering Full-Time Freshman Beneficiaries by Achievement/Ability Group and Institution Type and Control

```
                                              SAT SCORE

                    MEAN I  UNDER         800 -          950 -         OVER               ROW
                   COUNT I  800           950            1,100         1,100              TOTAL
                 STD DEV I
                         I          1 I            2 I           3 I           4 I
INST TYPE       ---------I------------I------------I-------------I-------------I
                       1 I     734,78 I     757,30 I     1033.62 I     1046,05 I       853,20
  PUBLIC 4-YEAR          I        118 I         81 I          73 I          44 I          315
                         I     774,64 I     558,23 I      617.57 I      653,11 I       683,93
                        -I------------I------------I-------------I-------------I
                       2 I     716,59 I     459,72 I      630.99 I      389,00 I       656,24
  PUBLIC 2-YEAR          I        157 I         40 I          26 I           3 I          226
                         I     731,29 I     225,98 I      370.11 I      118,50 I       635,94
                        -I------------I------------I-------------I-------------I
                       3 I    1178,35 I     953,13 I     1298.98 I     1095,93 I      1146,54
  PRIVATE 4-YEAR         I         43 I         16 I          24 I          38 I          121
                         I     737,49 I     292,19 I     1281.09 I     1062,68 I       934,76
                        -I------------I------------I-------------I-------------I
                       4 I     795,54 I     415,66 I     1115.00 I        0,00 I       676,07
  PRIVATE 2-YEAR         I          7 I          8 I           3 I           0 I           17
                         I     648,73 I     282,39 I        0.14 I        0,00 I       505,84
                        -I------------I------------I-------------I-------------I
                       5 I    1153,98 I     831,17 I     1320.00 I        0,00 I      1149,00
  PROFIT-MAKING          I         31 I          2 I           3 I           0 I           36
                         I     605,85 I    1135,00 I        0.00 I        0,00 I       603,33
                        -I------------I------------I-------------I-------------I
                       6 I     954,58 I     500,00 I      250.00 I        0,00 I       886,20
  VOCATIONAL             I         33 I          2 I           2 I           0 I           37
                         I     835,42 I       0,08 I        0.00 I        0,00 I       806,13
                        -I------------I------------I-------------I-------------I
                       7 I    1980,00 I     500,00 I        0.00 I        0,00 I      1167,49
  OTHER                  I          1 I          1 I           0 I           0 I            2
                         I       1,27 I       0,12 I        0.00 I        0,00 I       979,04
                        -I------------I------------I-------------I-------------I
      COLUMN TOTAL             832,92       675,84        998.04       1042.39         853,96
                                  390          151           131            86            757
                               761,90       480,89        763.67        855,21         735,27
```

TABLE B-11

Average Total Aid Received by 1972-73 Entering Full-Time Freshman Aid Recipients by Racial/Ethnic Group and Institution Type and Control

```
                                        RACIAL/ETHNIC GROUP

                     MEAN I
                    COUNT I  WHITE        BLACK        HISPANIC     OTHER              ROW
                  STD DEV I                                                           TOTAL
                          I        1  I         2  I         3  I         4  I
INST TYPE        --------I-----------I-----------I-----------I-----------I
                        1 I    917,85 I   1209,91 I   1135.34 I   1042.38 I      957,23
  PUBLIC 4-YEAR           I    2845   I    334    I    101    I    114    I      3394
                          I    781,64 I    740,15 I    571.18 I    725,16 I      775,74
                         -I-----------I-----------I-----------I-----------I
                        2 I    596,85 I    762,77 I    680.44 I    615,43 I      613,12
  PUBLIC 2-YEAR           I    1434   I    110    I     98    I     82    I      1725
                          I    628,43 I    551,58 I    571.86 I    903,66 I      637,49
                         -I-----------I-----------I-----------I-----------I
                        3 I   1652,28 I   2248,44 I   2517.90 I   2228,46 I     1733,32
  PRIVATE 4-YEAR          I    1706   I    150    I     21    I     89    I      1967
                          I   1047,07 I   1290,93 I   1103.27 I   1523,04 I     1112,55
                         -I-----------I-----------I-----------I-----------I
                        4 I    997,72 I   1972,22 I   1800.00 I   1601,95 I     1028,96
  PRIVATE 2-YEAR          I     164   I      3    I      1    I      2    I       170
                          I    879,54 I    331,28 I      0.00 I   1142,97 I      884,39
                         -I-----------I-----------I-----------I-----------I
                        5 I   1248,66 I   1310,12 I   1541.17 I   1218,21 I     1265,41
  PROFIT-MAKING           I     388   I     61    I     16    I     14    !       479
                          I    860,45 I    658,44 I    575.30 I    698,77 I      824,83
                         -I-----------I-----------I-----------I-----------I
                        6 I    870,05 I   1064,08 I      0.00 I    891,23 I      885,19
  VOCATIONAL              I     221   I     18    I      0    I     11    I       250
                          I    708,61 I    678,56 I      0.00 I    798,98 I      709,42
                         -I-----------I-----------I-----------I-----------I
                        7 I    911,43 I   1697,40 I   1438.39 I    500,00 I      974,97
  OTHER                   I      97   I      6    I      5    I      1    I       109
                          I    743,69 I   1349,26 I   1110.23 I      0,15 I      817,38
                         -I-----------I-----------I-----------I-----------I
     COLUMN TOTAL            1052,49     1378,94     1108.24     1271,98         1090,24
                              6855        684         242         314            8095
                             914,89      996,02      822.88     1225,33          938,23
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TABLE B-12

Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients by Racial/Ethnic Group and Institution Type and Control

RACIAL/ETHNIC GROUP

INST TYPE	MEAN COUNT STD DEV	WHITE 1	BLACK 2	HISPANIC 3	OTHER 4	ROW TOTAL
PUBLIC 4-YEAR	1	637,86	825,89	821.80	926,13	672,98
		1820	222	70	77	2190
		712,99	574,79	487.69	673,25	696,84
PUBLIC 2-YEAR	2	413,48	533,61	506.42	413,05	427,23
		666	50	55	36	807
		392,75	375,85	538.69	398,31	404,44
PRIVATE 4-YEAR	3	1114,17	1801,82	1977.85	1655,64	1210,49
		1264	122	20	76	1483
		848,62	1219,59	1083.53	1527,04	961,28
PRIVATE 2-YEAR	4	554,58	628,79	300.00	1601.95	578,41
		103	3	1	2	110
		337,21	451,74	0.08	1142,97	392,23
PROFIT-MAKING	5	641,86	823,92	0.00	327,73	632,58
		112	5	0	6	123
		568,01	402,00	0.00	271,18	554,79
VOCATIONAL	6	383,11	2000,00	0.00	1075.16	512,54
		65	2	0	9	77
		378,35	0,00	0.00	776,88	551,80
OTHER	7	783,15	1359,94	564.94	0,00	800,29
		52	4	5	0	60
		661,31	1212,77	342.66	0,00	685,79
COLUMN TOTAL		744,52	1092,50	851.49	1101,82	792,34
		4083	407	152	207	4848
		749,99	942,09	767.61	1143,83	797,24

TABLE B-13

Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Racial/Ethnic Group and Institution Type and Control

RACIAL/ETHNIC GROUP

INST TYPE	MEAN COUNT STD DEV	WHITE 1	BLACK 2	HISPANIC 3	OTHER 4	ROW TOTAL
PUBLIC 4-YEAR	1	400,79 992 334,87	501,43 159 295,58	412.55 32 283.40	452,08 57 411,48	416,38 1239 334,20
PUBLIC 2-YEAR	2	368,76 770 411,39	487,09 69 491,99	280.45 60 215.81	440,10 65 407,70	376,50 964 409,75
PRIVATE 4-YEAR	3	436,35 727 442,22	543,60 60 473,08	600.00 2 0.00	1397,04 14 1428,40	461,22 803 491,63
PRIVATE 2-YEAR	4	397,72 40 383,91	500,00 2 0,08	0.00 0 0.00	0,00 0 0,00	401,62 42 376,86
PROFIT-MAKING	5	615,32 148 587,59	473,35 19 460,29	0.00 0 0.00	150,05 6 54,95	583,98 173 571,13
VOCATIONAL	6	603,15 89 555,54	171,61 6 180,79	0.00 0 0.00	100,00 2 0,01	564,76 97 547,55
OTHER	7	295,72 40 327,57	150,00 1 0,03	0.00 0 0.00	500,00 1 0,15	297,17 42 320,81
COLUMN TOTAL		417,37 2806 414,89	496,83 316 391,91	332.80 94 248.22	519,32 144 637,61	426,87 3361 422,30

TABLE B-14

Average Loan Received by 1972-73 Entering Full-Time Freshman Loan Recipients by Racial/Ethnic Group and Institution Type and Control

RACIAL/ETHNIC GROUP

```
                   MEAN I
                  COUNT I   WHITE       BLACK      HISPANIC     OTHER          ROW
                STD DEV I                                                     TOTAL
                        I          1 I          2 I          3 I          4 I
INST TYPE      ---------I------------I------------I------------I------------I
                      1 I     822,47 I     687,47 I     745.88 I     739,50 I    797,05
  PUBLIC 4-YEAR         I       978  I       189  I        54  I        24  I     1245
                        I     462,08 I     417,18 I     366.59 I     474,48 I    454,31
                       -I------------I------------I------------I------------I
                      2 I     777,77 I     591,57 I     573.69 I     781,94 I    752,49
  PUBLIC 2-YEAR         I       224  I        23  I        13  I         9  I      269
                        I     524,29 I     370,04 I     400.93 I     425,15 I    506,92
                       -I------------I------------I------------I------------I
                      3 I    1070,68 I     861,67 I     752.12 I     949,13 I   1042,31
  PRIVATE 4-YEAR        I       902  I        90  I        14  I        56  I     1062
                        I     645,64 I     440,52 I     542.03 I     658,31 I    633,52
                       -I------------I------------I------------I------------I
                      4 I    1275,28 I    1500,00 I    1500.00 I       0,00 I   1284,62
  PRIVATE 2-YEAR        I        56  I         2  I         1  I         0  I       59
                        I     898,46 I       0,23 I       0.33 I       0,00 I    880,41
                       -I------------I------------I------------I------------I
                      5 I    1396,38 I    1234,61 I    1541.17 I    1281,06 I   1372,19
  PROFIT-MAKING         I       202  I        48  I        16  I        11  I      277
                        I     564,57 I     547,55 I     575.30 I     509,89 I    562,46
                       -I------------I------------I------------I------------I
                      6 I    1087,02 I    1261,97 I       0.00 I       0,00 I   1109,68
  VOCATIONAL            I        74  I        11  I         0  I         0  I       85
                        I     399,08 I     389,28 I       0.00 I       0,00 I    399,92
                       -I------------I------------I------------I------------I
                      7 I     994,26 I    1407,98 I    1400.00 I       0,00 I   1065,83
  OTHER                 I        33  I         4  I         3  I         0  I       40
                        I     444,62 I      96,00 I       0.18 I       0,00 I    433,54
                       -I------------I------------I------------I------------I
     COLUMN TOTAL             976,69       825,08       876.65       918,11      953,14
                               2470          367          101          100        3037
                             588,17       484,74       533.52       597,84      577,29
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TABLE B-15

Average Benefits Received by 1972-73 Entering Full-Time Freshman Beneficiaries by Racial/Ethnic Group and Institution Type and Control

RACIAL/ETHNIC GROUP

MEAN COUNT STD DEV		WHITE 1	BLACK 2	HISPANIC 3	OTHER 4	ROW TOTAL
INST TYPE						
PUBLIC 4-YEAR	1	907,65 274 708,04	430,44 25 328,78	494.62 8 196.30	464,09 8 286,20	847,62 315 686,00
PUBLIC 2-YEAR	2	649,59 189 655,50	640,47 17 507,23	940.83 16 533.52	85,00 1 0,02	667,16 222 639,63
PRIVATE 4-YEAR	3	1268,82 101 972,20	599,80 12 382,76	500.00 3 0.00	612,00 1 0,00	1174,73 117 940,65
PRIVATE 2-YEAR	4	859,94 21 641,77	720,00 2 0,11	0.00 0 0.00	0,00 0 0,00	848,52 23 618,78
PROFIT-MAKING	5	1198,76 32 590,66	1364,97 6 763,34	0.00 0 0.00	400,00 1 0,06	1192,64 39 619,61
VOCATIONAL	6	870,24 38 805,85	0,00 0 0,00	0.00 0 0.00	0,00 0 0,00	870,24 38 805,85
OTHER	7	1167,49 2 979,04	0,00 0 0,00	0.00 0 0.00	0,00 0 0.00	1167,49 2 979,04
COLUMN TOTAL		900,41 657 766,03	615,09 62 500,29	761.96 26 474.88	440,37 12 263,88	865,30 756 739,92

TABLE B-16

Average Total Aid Received by 1972-73 Entering Full-Time Freshman Aid Recipients by Median Family Income at Postsecondary Institution and Institution Type and Control

MEDIAN FAMILY INCOME

INST TYPE	MEAN COUNT STD DEV	UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	ROW TOTAL
PUBLIC 4-YEAR	1	945,44 515 668,89	885,99 1455 680,30	1034.91 811 685.28	940.42 2781 682.47
PUBLIC 2-YEAR	2	632,11 559 544,09	662,63 893 739,03	471.92 54 515.10	644.43 1506 666.41
PRIVATE 4-YEAR	3	1442,45 193 964,70	1687,50 671 972,55	1899.95 949 1209.69	1772.41 1813 1112.14
PRIVATE 2-YEAR	4	835,26 21 592,66	1043,35 108 914,83	1361.86 31 926.86	1078.26 160 891.30
PROFIT-MAKING	5	1406,41 115 626,11	1521,13 98 902,26	1494.31 6 89.68	1451.25 218 755.53
VOCATIONAL	6	861,08 53 546,60	287,82 13 122,59	0.00 0 0.00	751.09 65 542.39
OTHER	7	217,10 5 26,82	1346,86 7 1233,61	2153.52 3 2361.51	1123.47 14 1376.50
COLUMN TOTAL		920,19 1460 726,27	1012,79 3244 867,44	1469.88 1853 1090.24	1121.35 6557 935.11

TABLE B-17

Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients by Median Family Income at Postsecondary Institution and Institution Type and Control

MEDIAN FAMILY INCOME

INST TYPE	MEAN COUNT STD DEV	UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	ROW TOTAL
PUBLIC 4-YEAR	1	611,51	612,19	702.05	640,60
		284	936	567	1788
		517,07	503,90	531.53	516,32
PUBLIC 2-YEAR	2	378,00	479,55	382.54	436,92
		283	415	20	717
		376,22	441,04	328.15	416,43
PRIVATE 4-YEAR	3	894,62	1050,98	1417.61	1230.50
		143	529	746	1398
		687,27	793,69	1080.31	970.20
PRIVATE 2-YEAR	4	659,21	539,56	718.76	595,82
		14	67	23	104
		339,22	447,41	382.75	421.08
PROFIT-MAKING	5	698,63	882,30	0.00	801,89
		23	30	0	53
		581,36	672.63	0.00	635.05
VOCATIONAL	6	254,77	75,00	0.00	202.89
		6	2	0	8
		92,28	0,00	0.00	115.15
OTHER	7	0,00	487,97	1502.29	807,37
		0	6	3	8
		0,00	430,80	1531.79	942,33
COLUMN TOTAL		578,61	698,48	1092.11	807.50
		753	1965	1359	4077
		539,24	621,72	946.87	762.18

TABLE B-18

Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Median Family Income at Postsecondary Institution and Institution Type and Control

MEDIAN FAMILY INCOME

INST TYPE	MEAN COUNT STD DEV	UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	ROW TOTAL
PUBLIC 4-YEAR	1	486,77	416,28	362.24	417.11
		220	521	272	1013
		288,44	364,38	241.83	322,14
PUBLIC 2-YEAR	2	402,46	391,03	254.75	389,09
		296	496	37	829
		326,97	482,57	204.20	418,98
PRIVATE 4-YEAR	3	532,14	427,50	424.79	440,65
		99	293	327	719
		542,81	407,15	482.18	463,18
PRIVATE 2-YEAR	4	1000,00	345,07	434.25	391.14
		1	23	17	45
		0,34	166,46	557.03	368,19
PROFIT-MAKING	5	438,98	678,73	292.99	553.88
		28	32	3	63
		342,25	543,29	182.49	465,40
VOCATIONAL	6	751,96	257,21	0.00	663,93
		43	9	0	52
		524,62	146,82	0.00	498.43
OTHER	7	217,10	853,62	0.00	524.24
		5	4	0	9
		26,82	612,40	0.00	520,23
COLUMN TOTAL		470,44	414,48	389.02	422.55
		592	1384	655	2730
		369,78	423,33	389.86	403.35

TABLE 3-19

Average Loan Received by 1972-73 Entering Full-Time Freshman Loan Recipients by Median Family Income at Postsecondary Institution and Institution Type and Control

```
                                MEDIAN FAMILY INCOME

            MEAN I
           COUNT I UNDER        $ 7,500 -   $10,500 -          ROW
         STD DEV I $ 7,500      $10,500     $15,000            TOTAL
                 I          1 I          2 I          3 I
INST TYPE --------I-----------I-----------I-----------I
               1 I    808,66 I    733,74 I    876.14 I     791.36
  PUBLIC 4-YEAR  I     209   I     529   I     317   I     1055
                 I    529,53 I    389,21 I    513.39 I     462.76
                -I-----------I-----------I-----------I
               2 I    782,01 I    766,36 I    500.00 I     770.42
  PUBLIC 2-YEAR  I     97    I     163   I      2    I     262
                 I    472,94 I    523,55 I      0.00 I     503,18
                -I-----------I-----------I-----------I
               3 I    814,00 I   1070,19 I   1066.23 I    1043,42
  PRIVATE 4-YEAR I     98    I     385   I     528   I     1011
                 I    507,00 I    555,26 I    707.93 I     639,60
                -I-----------I-----------I-----------I
               4 I   1339,37 I   1330,91 I   1241.27 I    1291,12
  PRIVATE 2-YEAR I      5    I     41    I     12    I      58
                 I    813,24 I    990,80 I    553.47 I     889,49
                -I-----------I-----------I-----------I
               5 I   1338,14 I   1350,31 I   1356.95 I    1343,85
  PROFIT-MAKING  I     91    I     69    I      6    I     166
                 I    544,89 I    484,62 I    259.69 I     511,04
                -I-----------I-----------I-----------I
               6 I    779,49 I    270,00 I      0.00 I     733.04
  VOCATIONAL     I     12    I      1    I      0    I      13
                 I    450,15 I      0,07 I      0.00 I     453,78
                -I-----------I-----------I-----------I
               7 I      0,00 I    500,00 I   1300.00 I     940,44
  OTHER          I      0    I      1    I      1    I       2
                 I      0,00 I      0,00 I      0.00 I     524.59
                -I-----------I-----------I-----------I
    COLUMN TOTAL      902,85      901,69     1200.35       935.22
                       512         1189        866          2567
                      556,98      540,83      645.47       582,94
```

TABLE B-20

Average Benefits Received by 1972-73 Entering Full-Time Freshman Beneficiaries by Median Family Income at Postsecondary Institution and Institution Type and Control

MEDIAN FAMILY INCOME

INST TYPE	MEAN COUNT STD DEV	UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	ROW TOTAL
PUBLIC 4-YEAR	1	987,23	800,98	796.48	826.80
		38	138	81	257
		918,47	643,40	655.35	694,00
PUBLIC 2-YEAR	2	647,08	647,37	1220.94	665,95
		79	113	6	199
		634,59	664,10	749.66	659,70
PRIVATE 4-YEAR	3	1212,21	1196,64	1062.48	1146,75
		15	50	41	105
		865,07	1152,34	773.61	975,46
PRIVATE 2-YEAR	4	320,00	1087,87	1115.00	972.43
		3	13	3	19
		0,00	635,76	0.14	602,20
PROFIT-MAKING	5	1074,67	1132,95	0.00	1095,70
		10	6	0	16
		398,35	217,26	0.00	336,72
VOCATIONAL	6	370,74	350,00	0.00	365,90
		7	2	0	9
		346,86	0,00	0.00	298,00
OTHER	7	0,00	1980,00	0.00	1980,00
		0	1	0	1
		0,00	1,27	0.00	1.27
COLUMN TOTAL		796,14	826,15	906.96	836.14
		151	323	131	605
		743,90	767,71	701.94	747.80

TABLE B-21

Average Total Aid Received by 1972-73 Entering Full-Time Freshman Aid Recipients by Median Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

MEDIAN SAT SCORE

MEAN COUNT STD DEV		UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
INST TYPE						
PUBLIC 4-YEAR	1	1001,05 364 711,68	901,87 617 641,83	899.10 1960 663.00	1211.41 499 1199,97	955,70 3441 773,44
PUBLIC 2-YEAR	2	480,98 143 378,23	632,28 1603 655,48	439.50 21 577.51	0,00 0 0,00	617,76 1767 638,06
PRIVATE 4-YEAR	3	1495,00 98 913,14	1417,35 334 947,45	1704.55 1020 990.92	1986,21 546 1366,87	1723,15 1999 1112,79
PRIVATE 2-YEAR	4	839,80 14 821,94	1090,83 149 890,58	724.89 13 727.54	0,00 0 0.00	1044,02 176 877,58
PROFIT-MAKING	5	1227,58 439 791,66	1052,26 18 403,12	2014.28 25 1180.82	0,00 0 0,00	1261,84 482 823,44
VOCATIONAL	6	912,30 236 719,73	474,08 16 258,00	0.00 0 0.00	0,00 0 0,00	884,94 252 707,62
OTHER	7	897,12 103 706,94	1561,68 4 1435,47	1511.39 8 1322.48	0,00 0 0,00	963,22 115 804,80
COLUMN TOTAL		1029,38 1398 770,36	817,00 2743 755,74	1175.72 3047 885.47	1616,24 1045 1346,15	1087,31 8233 935,03

TABLE B-22

Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients by Median Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

MEDIAN SAT SCORE

INST TYPE	MEAN COUNT STD DEV	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
PUBLIC 4-YEAR	1	586,08	619,56	618.42	968.33	670,48
		238	383	1251	352	2224
		394,50	467,85	515.89	1281.49	692,61
PUBLIC 2-YEAR	2	329,74	437,97	180.41	0,00	426,59
		47	752	16	0	815
		225,71	412,71	123.76	0,00	402,67
PRIVATE 4-YEAR	3	1018,64	889,27	1106.89	1557,87	1204,24
		60	208	803	438	1509
		801,18	678,67	793.86	1225,43	956,57
PRIVATE 2-YEAR	4	662,45	638,27	374.55	0,00	610,34
		6	97	13	0	116
		372,76	418,00	333.60	0,00	412,89
PROFIT-MAKING	5	592,28	1084,67	799.45	0,00	632,58
		108	7	8	0	123
		574,57	107,27	220.82	0,00	554,79
VOCATIONAL	6	544,21	156,62	0.00	0,00	512,54
		70	6	0	0	77
		564,61	98,30	0.00	0,00	551,80
OTHER	7	809,18	300,00	1093.35	0,00	800,29
		53	3	4	0	60
		645,54	0,00	1307.73	0,00	685,79
COLUMN TOTAL		627,51	564,90	802.24	1295,29	790,44
		583	1456	2095	789	4923
		545,87	499,09	680.80	1283,84	793,20

TABLE B-23

Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Median Achievement/Ability Score at Postsecondary institution and Institution Type and Control

MEDIAN SAT SCORE

INST TYPE	MEAN COUNT STD DEV	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
PUBLIC 4-YEAR	1	433,98	453,36	408.20	381,83	414,80
		152	199	718	177	1246
		316,00	291,72	344.34	349,17	334,12
PUBLIC 2-YEAR	2	367,53	382,23	363.91	0,00	380,86
		81	894	8	0	983
		324,82	420,25	305.71	0,00	412,12
PRIVATE 4-YEAR	3	590,41	497,39	471.65	356,04	460,83
		59	164	417	173	812
		395,01	461,35	562.04	309,23	489,85
PRIVATE 2-YEAR	4	300,00	390,08	400.00	0,00	386,14
		3	40	5	0	48
		0,23	390,11	0.00	0,00	358,34
PROFIT-MAKING	5	571,41	498,21	751.85	0,00	583,98
		144	12	17	0	173
		569,98	426,13	664.44	0,00	571,13
VOCATIONAL	6	598,87	262,76	0.00	0,00	564,76
		87	10	0	0	97
		567,69	42,74	0.00	0,00	547,55
OTHER	7	232,34	853,62	0.00	0,00	290,73
		41	4	0	0	46
		197,68	612,40	0.00	0,00	310,71
COLUMN TOTAL		485,63	409,11	435.54	369,11	426,77
		566	1323	1165	350	3404
		451,73	409,68	441.54	329,85	421,89

TABLE B-24

Average Loan Received by 1972-73 Entering Full-Time Freshman Loan Recipients by Median Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

MEDIAN SAT SCORE

INST TYPE	MEAN COUNT STD DEV	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
PUBLIC 4-YEAR	1	897,23	817,98	777.73	769.58	797,60
		152	216	699	201	1268
		570,42	463,97	419.64	462,83	455,76
PUBLIC 2-YEAR	2	443,50	777,19	754.26	0,00	760,40
		14	267	4	0	285
		303,58	513,44	57.10	0,00	506,16
PRIVATE 4-YEAR	3	844,18	1038,07	1050.25	1050,87	1039,71
		46	158	548	319	1072
		450,51	499,70	579.10	780,35	631,89
PRIVATE 2-YEAR	4	1300,00	1297,54	1000.00	0,00	1284,62
		2	55	3	0	59
		0,00	911,63	0.00	0,00	880,41
PROFIT-MAKING	5	1350,58	1118,59	1627.19	0,00	1364,91
		256	6	19	0	280
		565,02	466,40	513.26	0,00	563,72
VOCATIONAL	6	1117,39	270,00	0.00	0,00	1105,64
		85	1	0	0	86
		388,37	0,07	0.00	0,00	398,31
OTHER	7	1031,33	0,00	1449.83	0,00	1080,89
		38	0	5	0	44
		420,26	0,00	96.54	0,00	418,13
COLUMN TOTAL		1119,02	890,91	910.41	942,30	951,33
		593	703	1279	520	3095
		568,77	558,83	520.28	688,96	575,44

TABLE B-25

Average Benefits Received by 1972-73 Entering Full-Time Freshman Beneficiaries by Median Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

```
                                   MEDIAN SAT SCORE

             MEAN I
            COUNT I  UNDER        800 -        950 -       OVER              ROW
          STD DEV I  800          950          1,100       1,100             TOTAL
                  I         1 I          2 I          3 I          4 I
INST TYPE --------I-----------I------------I------------I------------I
                1 I    580,59 I     760,56 I     901.27 I    1059,05 I      849,43
  PUBLIC 4-YEAR   I        40 I         69 I        168 I         40 I         317
                  I    466,16 I     426,21 I     827.97 I     420,35 I      683,86
                 -I-----------I------------I------------I------------I
                2 I    692,68 I     654,15 I       0.00 I       0,00 I      658,30
  PUBLIC 2-YEAR   I        25 I        207 I          0 I          0 I         232
                  I    396,22 I     652,05 I       0.00 I       0,00 I      628,99
                 -I-----------I------------I------------I------------I
                3 I    991,40 I    1350,95 I    1264.45 I     367,40 I     1146,54
  PRIVATE 4-YEAR  I        12 I         32 I         62 I         15 I         121
                  I    446,73 I     771,42 I    1076.89 I     361,29 I      934,76
                 -I-----------I------------I------------I------------I
                4 I    676,13 I     926,19 I       0.00 I       0,00 I      848,52
  PRIVATE 2-YEAR  I         7 I         16 I          0 I          0 I          23
                  I    758,76 I     555,47 I       0.00 I       0,00 I      618,78
                 -I-----------I------------I------------I------------I
                5 I   1192,64 I       0,00 I       0.00 I       0,00 I     1192,64
  PROFIT-MAKING   I        39 I          0 I          0 I          0 I          39
                  I    619,61 I       0,00 I       0,00 I       0,00 I      619,61
                 -I-----------I------------I------------I------------I
                6 I    934,68 I     552,32 I       0.00 I       0,00 I      870,24
  VOCATIONAL      I        32 I          6 I          0 I          0 I          38
                  I    853,95 I     416,23 I       0.00 I       0,00 I      805,85
                 -I-----------I------------I------------I------------I
                7 I    500,00 I    1980,00 I       0.00 I       0,00 I     1167,49
  OTHER           I         1 I          1 I          0 I          0 I           2
                  I      0,12 I       1,27 I       0.00 I       0,00 I      979,04
                 -I-----------I------------I------------I------------I
     COLUMN TOTAL      858,72       758,66       999.24       865,58        858,17
                          157          331          230           55           773
                       641,87       649,98       913.80       509,21        734,78
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TABLE B-26

Average Total Aid Received by 1972-73 Entering Full-Time Freshman Aid Recipients by Institution Tuition Dependence and Institution Type and Control

TUITION AS SHARE OF INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT STD DEV	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	980,39 630 887,60	955,98 2321 758,11	1043.78 202 743.88	966.48 3152 784,87
PUBLIC 2-YEAR	2	649,09 1006 696,78	616,09 520 597,27	527.05 120 420.17	629,75 1646 650.35
PRIVATE 4-YEAR	3	705,33 15 1007,16	1708,82 269 1289,47	1740.19 1681 1077.09	1727,92 1965 1111.18
PRIVATE 2-YEAR	4	0,00 0 0,00	1125,09 32 736,97	1044.67 135 908.36	1060,11 167 876,60
PROFIT-MAKING	5	0,00 0 0,00	1000,00 4 0,11	1462.55 193 777.00	1453.62 197 772.06
VOCATIONAL	6	481,97 8 273,60	465,23 7 259,49	833.89 53 555.58	751.85 69 524.21
OTHER	7	3780,00 1 1,80	300,00 1 0,08	1041.10 13 1157.70	1163,08 15 1302,28
COLUMN TOTAL		776,41 1660 795,83	964,50 3154 834,69	1535.27 2397 1050.44	1110,96 7212 955,05

TABLE B-27

Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients by Institution Tuition Dependence and Institution Type and Control

TUITION AS SHARE OF INSTRUCTIONAL BUDGET

INST	MEAN COUNT STD DEV	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	772,26	659,05	603.81	677,13
		388	1521	128	2037
		882,43	677,44	482.39	712,33
PUBLIC 2-YEAR	2	465,15	405,41	308.51	430,79
		433	270	65	768
		455,76	361,08	235.33	411,60
PRIVATE 4-YEAR	3	594,98	1184,25	1211.77	1205,58
		7	189	1297	1492
		516,65	1206,94	915.49	956,25
PRIVATE 2-YEAR	4	0,00	702,51	558.57	599,87
		0	32	80	112
		0,00	483,05	371.56	409,65
PROFIT-MAKING	5	0,00	1000,00	785.41	802,03
		0	4	45	49
		0,00	0,11	682.75	657,77
VOCATIONAL	6	300,00	120,00	175.58	166,13
		2	4	6	13
		0,05	0,01	116.84	103,70
OTHER	7	0,00	300,00	901.97	807,37
		0	1	7	8
		0,00	0,08	1007.43	942,33
COLUMN TOTAL		609,53	674,05	1078.55	809,21
		829	2021	1629	4479
		705,32	732,57	886.24	813,40

TABLE B-28

Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Institution Tuition Dependence and Institution Type and Control

TUITION AS SHARE OF INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT STD DEV	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	460,23	412,24	419.59	423,52
		261	831	56	1148
		338,03	342,28	277.11	338,74
PUBLIC 2-YEAR	2	395,84	330,63	498.42	383,04
		593	266	55	915
		458,43	245,42	453.61	409,41
PRIVATE 4-YEAR	3	137,53	576,64	436.35	457,92
		6	134	651	791
		53,04	542,60	477.48	490,68
PRIVATE 2-YEAR	4	0,00	359,49	409.12	391,14
		0	16	29	45
		0,00	177,11	443.93	368,12
PROFIT-MAKING	5	0,00	0,00	549.28	549,28
		0	0	61	61
		0,00	0,00	472.05	472,05
VOCATIONAL	6	273,45	250,00	742.61	654,94
		5	4	44	54
		58,31	0,03	501.21	489.68
OTHER	7	1800,00	0,00	354.87	524.24
		1	0	8	9
		0,00	0,00	176.63	520.23
COLUMN TOTAL		414,39	411,26	460.03	426,74
		867	1252	904	3023
		426.55	355,93	468.39	413,05

TABLE B-29

Average Loans Received by 1972-73 Entering Full-Time Freshman Loan Recipients by Institution Tuition Dependence and Institution Type and Control

TUITION AS SHARE OF INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT STD DEV	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	686,82	789,85	1099.82	794,13
		200	906	83	1189
		390,68	447,09	618.51	461,19
PUBLIC 2-YEAR	2	757,72	839,27	415.46	775,71
		142	113	13	268
		461,16	556,42	288.16	504,13
PRIVATE 4-YEAR	3	772,39	968,31	1049.65	1038,07
		6	132	924	1062
		274,41	529,78	647.87	633,53
PRIVATE 2-YEAR	4	0,00	982,48	1339.38	1291,12
		0	8	50	58
		0,00	267,66	943.35	889,49
PROFIT-MAKING	5	0,00	0,00	1358.54	1358,54
		0	0	146	146
		0,00	0,00	517.86	517,86
VOCATIONAL	6	0,00	270,00	779.49	733,04
		0	1	12	13
		0,00	0,07	450.19	453,78
OTHER	7	0,00	0,00	1169.10	1169,10
		0	0	4	4
		0,00	0,00	475.47	475,47
COLUMN TOTAL		717,22	815,73	1092.44	927,59
		348	1160	1231	2739
		420,04	471,05	654.51	576,09

TABLE B-30

Average Benefits Received by 1972-73 Entering Full-Time Freshman Beneficiaries by Institution Tuition Dependence and Institution Type and Control

TUITION AS SHARE OF INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT STD DEV	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	999,41	801,88	805.56	844,66
		60	197	23	281
		871,56	633,07	506.53	684,91
PUBLIC 2-YEAR	2	724,98	570,54	490.80	668,38
		150	49	21	220
		760,58	192,02	145,67	641,41
PRIVATE 4-YEAR	3	511,00	1712,17	1043.29	1133,59
		3	18	95	116
		0,00	1248,20	859.40	950,85
PRIVATE 2-YEAR	4	0,00	0,00	972.43	972,43
		0	0	19	19
		0,00	0,00	602,20	602,20
PROFIT-MAKING	5	0,00	0,00	1086.03	1086,03
		0	0	14	14
		0,00	0,00	351.42	351,42
VOCATIONAL	6	425,16	900,00	299.46	452,44
		5	2	4	11
		420,75	0,15	57.27	340,10
OTHER	7	1980,00	0,00	0.00	1980,00
		1	0	0	1
		1,27	0,00	0.00	1,27
COLUMN TOTAL		797,03	822,23	924.74	841,26
		219	266	177	662
		793,98	686,16	721.37	733,45

TABLE B-31

Average Total Aid Received by 1972-73 Entering Full-Time Freshman Aid Recipients by Institution Dependence on Government Revenue and Institution Type and Control

GOVERNMENT REVENUE AS SHARE OF INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT STD DEV	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	1043,78	1005,36	952.39	966,48
		202	490	2460	3152
		743,88	725,37	799.08	784,87
PUBLIC 2-YEAR	2	539,20	550,79	637.91	629,75
		104	37	1505	1646
		420,43	361,61	668.18	650,35
PRIVATE 4-YEAR	3	1736,78	1110,59	1889.09	1727,92
		1931	29	5	1965
		1115,81	449,17	1129.09	1111,18
PRIVATE 2-YEAR	4	1077,34	524,09	0.00	1060,11
		162	5	0	167
		880,59	561,62	0.00	876,60
PROFIT-MAKING	5	1462,55	0,00	1000.00	1453,62
		193	0	4	197
		777,00	0,00	0.11	772,06
VOCATIONAL	6	833,89	0,00	474.08	751,85
		53	0	16	69
		555,58	0,00	258.00	524,21
OTHER	7	1041,10	0,00	1850.99	1163,08
		13	0	2	15
		1157,70	0,00	2289.18	1302,28
COLUMN TOTAL		1555,81	976,66	833.58	1110,96
		2659	561	3992	7212
		1079,91	724,16	768.43	955,05

TABLE B-32

Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients by Institution Dependence on Government Revenue and Institution Type and Control

GOVERNMENT REVENUE AS SHARE OF
INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT STD DEV	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
	1	603,81	695,26	678.99	677.13
PUBLIC 4-YEAR		128	359	1550	2037
		482,39	557,08	758.64	712,33
	2	318,62	473,07	439.16	430,79
PUBLIC 2-YEAR		58	16	694	768
		268,93	197,49	423.83	411.60
	3	1209,25	923,70	1100.00	1205,58
PRIVATE 4-YEAR		1471	18	3	1492
		961,12	491,40	0.00	956,25
	4	614,02	203,75	0.00	599,87
PRIVATE 2-YEAR		108	4	0	112
		409,18	146,64	0.00	409,65
	5	785,41	0,00	1000.00	802,03
PROFIT-MAKING		45	0	4	49
		682,75	0,00	0.11	657,77
	6	175,58	0,00	156.62	166,13
VOCATIONAL		6	0	6	13
		116,84	0,00	98.30	103,70
	7	901,97	0,00	300.00	807,37
OTHER		7	0	1	8
		1007,43	0,00	0.08	942,33
COLUMN TOTAL		1087,99	691,66	604.78	809,21
		1823	397	2258	4479
		924,05	546,93	680.86	813,40

TABLE B-33

Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Institution Dependence on Government Revenue and Institution Type and Control

GOVERNMENT REVENUE AS SHARE OF INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT STD DEV	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	419,59	326,31	439.74	423.52
		56	154	938	1148
		277,11	237,16	353.53	338,74
PUBLIC 2-YEAR	2	443,77	682,61	375.72	383,04
		53	10	852	915
		393,56	587,54	406.85	409,41
PRIVATE 4-YEAR	3	454,62	629,78	0.00	457,92
		776	15	0	791
		492,80	330,86	0.00	490,68
PRIVATE 2-YEAR	4	391,14	0,00	0.00	391.14
		45	0	0	45
		368,19	0,00	0.00	368.19
PROFIT-MAKING	5	549,28	0,00	0.00	549,28
		61	0	0	61
		472,05	0,00	0.00	472,05
VOCATIONAL	6	742,61	0,00	262.76	654,94
		44	0	10	54
		501,21	0,00	42.74	489,68
OTHER	7	354,87	0,00	1800.00	524,24
		8	0	1	9
		176,63	0,00	0.00	520,23
COLUMN TOTAL		466,35	371,67	409.26	426,74
		1043	179	1801	3023
		475,10	295,65	381.56	413,05

TABLE B-34

Average Loan Received by 1972-73 Entering Full-Time Freshman Loan Recipients by Institution Dependence on Government Revenue and Institution Type and Control

GOVERNMENT REVENUE AS SHARE OF INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT STD DEV	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	1099,82	766,76	772.33	794.13
		83	217	888	1189
		618,51	473,74	430.43	461.19
PUBLIC 2-YEAR	2	415,46	800,00	793.74	775,71
		13	5	251	268
		288,16	0,09	511.16	504.13
PRIVATE 4-YEAR	3	1042,70	568,69	829.01	1038,07
		1049	8	5	1062
		635,20	304,47	267.43	633,53
PRIVATE 2-YEAR	4	1301,28	1000,00	0.00	1291,12
		56	2	0	58
		903,45	0,00	0.00	889.49
PROFIT-MAKING	5	1358,54	0,00	0.00	1358,54
		146	0	0	146
		517,86	0,00	0.00	517,86
VOCATIONAL	6	779,49	0,00	270.00	733,04
		12	0	1	13
		450,15	0,00	0.07	453,78
OTHER	7	1169,10	0,00	0.00	1169,10
		4	0	0	4
		475,47	0,00	0.00	475,47
COLUMN TOTAL		1082,68	762,37	776.73	927,59
		1362	233	1145	2739
		643,59	463,18	448.70	576,09

TABLE B-35

Average Benefits Received by 1972-73 Entering Full-Time Freshman Beneficiaries by Institution Dependence on Government Revenues and Institution Type and Control

GOVERNMENT REVENUE AS SHARE OF INSTRUCTIONAL BUDGET

INST TYPE	MEAN COUNT STD DEV	UNDER 20 PERCENT 1	20 TO 60 PERCENT 2	OVER 60 PERCENT 3	ROW TOTAL
PUBLIC 4-YEAR	1	805,56 23 506,53	625,84 42 405,52	891.96 215 736.65	844,66 281 684,91
PUBLIC 2-YEAR	2	552,59 16 109,06	300,00 5 0,03	687.05 199 670.11	668,38 220 641,41
PRIVATE 4-YEAR	3	1152,29 112 963,96	1008,00 1 0,00	511.00 3 0.00	1133,59 116 950,85
PRIVATE 2-YEAR	4	972,43 19 602,20	0,00 0 0,00	0.00 0 0.00	972,43 19 602,20
PROFIT-MAKING	5	1086,03 14 351,42	0,00 0 0,00	0.00 0 0.00	1086,03 14 351,42
VOCATIONAL	6	299,46 4 57,27	0,00 0 0,00	552.32 6 416.23	452,44 11 340,10
OTHER	7	0,00 0 0,00	0,00 0 0,00	1980.00 1 1.27	1980.00 1 1,27
COLUMN TOTAL		1017,05 188 819,51	602,54 49 396,39	790.69 425 708.15	841,26 662 733,45

TABLE B-36

Average Total Aid Received by 1972-73 Entering Full-Time Freshman Aid Recipients by Institution Dependence on Gift and Endowment Income and Institution Type and Control

GIFT AND ENDOWMENT INCOME AS SHARE OF INSTRUCTIONAL BUDGET

INST TYPE		MEAN COUNT STD DEV	UNDER 10 PERCENT 1	OVER 10 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1		967,33	878,85	966.48
			3122	30	3152
			787,70	394,96	784.87
PUBLIC 2-YEAR	2		628,58	801,25	629.75
			1635	11	1646
			652,16	237,70	650.35
PRIVATE 4-YEAR	3		1727,68	1728,07	1727.92
			747	1218	1965
			1063,65	1139,79	1111.18
PRIVATE 2-YEAR	4		947,29	1136,32	1060.11
			67	100	167
			749,14	949,18	876.60
PROFIT-MAKING	5		1453,62	0,00	1453.62
			197	0	197
			772,06	0,00	772.06
VOCATIONAL	6		751,85	0,00	751.85
			69	0	69
			524,21	0,00	524.21
OTHER	7		1528,07	230,69	1163.08
			11	4	15
			1379,92	52,55	1302.28
COLUMN TOTAL			984,47	1653,48	1110.96
			5848	1363	7212
			861,39	1131,23	955.05

TABLE B-37

Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients by Institution Dependence on Gift and Endowment Income and Institution Type and Control

INST TYPE	MEAN COUNT STD DEV	GIFT AND ENDOWMENT INCOME AS SHARE OF INSTRUCTIONAL BUDGET		ROW TOTAL
		UNDER 10 PERCENT 1	OVER 10 PERCENT 2	
PUBLIC 4-YEAR	1	677,53	650,94	677.13
		2006	30	2037
		716,10	395,01	712.33
PUBLIC 2-YEAR	2	428,12	805,80	430.79
		763	5	768
		411,59	187,93	411.60
PRIVATE 4-YEAR	3	1118,14	1259,86	1205.58
		572	921	1492
		896,61	988,06	956.25
PRIVATE 2-YEAR	4	422,62	699,45	599.87
		40	72	112
		358,74	424,94	409.65
PROFIT-MAKING	5	802,03	0,00	802.03
		49	0	49
		657,77	0,00	657.77
VOCATIONAL	6	166,13	0,00	166.13
		13	0	13
		103,70	0,00	103.70
OTHER	7	905,81	300,00	807.37
		7	1	8
		1009,84	0,00	942.33
COLUMN TOTAL		692,80	1199,32	809.21
		3449	1029	4479
		725,03	959,36	813.40

TABLE B-38

Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Institution Dependence on Gift and Endowment Income and Institution Type and Control

		GIFT AND ENDOWMENT INCOME AS SHARE OF INSTRUCTIONAL BUDGET		
INST TYPE	MEAN COUNT STD DEV	UNDER 10 PERCENT 1	OVER 10 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	424,11	200,00	423.52
		1145	3	1148
		339,00	0,03	338.74
PUBLIC 2-YEAR	2	383,19	319,73	383.04
		913	2	915
		409,75	295,02	409.41
PRIVATE 4-YEAR	3	533,00	424,23	457.92
		245	546	791
		591,76	434,22	490.68
PRIVATE 2-YEAR	4	360,09	397,33	391.14
		8	38	45
		163,20	397,94	368.19
PROFIT MAKING	5	549,28	0,00	549.28
		61	0	61
		472,05	0,00	472.05
VOCATIONAL	6	654,94	0,00	654.94
		54	0	54
		489,68	0,00	489.68
OTHER	7	691,61	200,00	524.24
		6	3	9
		583,02	0,02	520.23
COLUMN TOTAL		428,42	419,84	426.74
		2431	592	3023
		409,01	429,51	413.25

TABLE B-39

Average Loan Received by 1972-73 Entering Full-Time Loan Recipients by Institution Dependence on Gift and Endowment Income and Institution Type and Control

GIFT AND ENDOWMENT INCOME AS SHARE OF INSTRUCTIONAL BUDGET

INST TYPE		MEAN COUNT STD DEV	UNDER 10 PERCENT 1	OVER 10 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1		797,29 1176 462,58	499,88 13 81,40	794.13 1189 461.19
PUBLIC 2-YEAR	2		775,26 264 508,82	800,00 5 0,09	775.71 268 504.13
PRIVATE 4-YEAR	3		1193,59 409 714,67	940,40 652 555,51	1038.07 1062 633.53
PRIVATE 2-YEAR	4		1478,99 23 596,56	1162,08 34 1033,36	1291.12 58 889.49
PROFIT-MAKING	5		1358,54 146 517,86	0,00 0 0,00	1358.54 146 517.86
VOCATIONAL	6		733,04 13 453,78	0,00 0 0,00	733.04 13 453.78
OTHER	7		1169,10 4 475,47	0,00 0 0,00	1169.10 4 475.47
COLUMN TOTAL			922,51 2035 572,99	942,26 704 585,10	927.59 2739 576.09

TABLE B-40

Average Benefits Received by 1972-73 Entering Full-Time Freshman Beneficiaries by Institution Dependence on Gift and Endowment Income and Institution Type and Control

INST TYPE	MEAN COUNT STD DEV	GIFT AND ENDOWMENT INCOME AS SHARE OF INSTRUCTIONAL BUDGET UNDER 10 PERCENT 1	 OVER 10 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	844,66 281 684,91	0,00 0 0,00	844.66 281 684.91
PUBLIC 2-YEAR	2	668,38 220 641,41	0,00 0 0,00	668.38 220 641.41
PRIVATE 4-YEAR	3	994,74 32 949,22	1187,30 84 951,69	1133.59 116 950.85
PRIVATE 2-YEAR	4	1069,38 9 666,17	884,37 10 559,68	972.43 19 602.20
PROFIT-MAKING	5	1086,03 14 351,42	0,00 0 0,00	1086.03 14 351.42
VOCATIONAL	6	452,44 11 340,10	0,00 0 0,00	452.44 11 340.10
OTHER	7	1980,00 1 1,27	0,00 0 0,00	1980.00 1 1.27
COLUMN TOTAL		789,38 568 684,87	1155,87 94 921,32	841.26 662 733.45

TABLE B-41

Average Total Aid Received by 1972-73 Entering Full-Time Freshman Aid Recipients by Available Institutional Aid Funds and Institution Type and Control

	MEAN COUNT STD DEV	DISCRETIONARY AID FUNDS AS SHARE OF STUDENT BUDGET		
INST TYPE		UP TO 5 PERCENT 1	OVER 5 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	1000,99	936,12	960.35
		1161	1946	3107
		940,20	670,74	782.83
PUBLIC 2-YEAR	2	667,64	531,42	630.35
		1193	450	1642
		692,77	511,72	650.94
PRIVATE 4-YEAR	3	1612,71	1769,24	1724.04
		564	1390	1955
		1134,11	1091,41	1105.90
PRIVATE 2-YEAR	4	1105,63	994,63	1060.11
		99	69	167
		923,82	825,98	876.60
PROFIT-MAKING	5	1405,52	1657,68	1451.58
		180	40	220
		659,33	1061,33	752.35
VOCATIONAL	6	727,81	773,65	729.51
		69	3	71
		525,30	744,24	527.79
OTHER	7	2101,89	466,50	1163.08
		7	9	15
		1563,32	311,18	1302.28
COLUMN TOTAL		1006,88	1193,32	1108.34
		3272	3906	7178
		942,02	952,15	952.02

TABLE B-42

Average Grant or Scholarship Aid Received by 1972-73 Entering Full-Time Freshman Grant Recipients by Available Institutional Aid Funds and Institution Type and Control

DISCRETIONARY AID FUNDS
AS SHARE OF
STUDENT BUDGET

INST TYPE	MEAN COUNT STD DEV	UP TO 5 PERCENT 1	OVER 5 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	665,94	673,25	670.47
		757	1237	1994
		931,42	540,53	714.38
PUBLIC 2-YEAR	2	438,08	411,73	432.07
		590	175	764
		428,76	350,59	412.15
PRIVATE 4-YEAR	3	1102,93	1242,89	1205.16
		400	1082	1482
		899,77	960,21	946.04
PRIVATE 2-YEAR	4	571,18	645,78	599.87
		69	43	112
		394,64	433,37	409.65
PROFIT-MAKING	5	802,35	799,45	801.89
		44	8	53
		686,69	220,82	635.05
VOCATIONAL	6	166,13	0,00	166.13
		13	0	13
		103,70	0,00	103.70
OTHER	7	2070,77	300,00	807.37
		2	6	8
		918,03	0,00	942.33
COLUMN TOTAL		685,56	896,12	806.93
		1875	2551	4426
		811,77	798,31	810.65

TABLE B-43

Average Earnings Received by 1972-73 Entering Full-Time Freshman Job Holders by Available Institution Aid Funds and Institution Type and Control

DISCRETIONARY AID FUNDS
AS SHARE OF
STUDENT BUDGET

INST TYPE		MEAN COUNT STD DEV	UP TO 5 PERCENT 1	OVER 5 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	MEAN	450,75	404,73	421.18
		COUNT	406	730	1136
		STD DEV	393,03	300,34	336.96
PUBLIC 2-YEAR	2	MEAN	401,05	343,40	383.76
		COUNT	638	273	911
		STD DEV	430,13	356,32	410.05
PRIVATE 4-YEAR	3	MEAN	610,17	409,35	458.27
		COUNT	192	595	786
		STD DEV	682,41	401,31	492.14
PRIVATE 2-YEAR	4	MEAN	350,41	428,82	391.14
		COUNT	22	24	45
		STD DEV	183,60	482,07	368.19
PROFIT-MAKING	5	MEAN	502,02	660,26	553.88
		COUNT	42	21	63
		STD DEV	357,02	630,56	465.41
VOCATIONAL	6	MEAN	631,02	0,00	631.02
		COUNT	56	0	56
		STD DEV	491,01	0,00	491.01
OTHER	7	MEAN	867,45	381,17	524.24
		COUNT	3	6	9
		STD DEV	966,43	190,81	520.23
COLUMN TOTAL		MEAN	458,17	399,68	426.10
		COUNT	1358	1648	3007
		STD DEV	469,29	358,35	413.13

TABLE B-44

Average Loan Received by 1972-73 Entering Full-Time Freshman Loan Recipients by Available Institution Aid Funds and Institution Type and Control

DISCRETIONARY AID FUNDS
AS SHARE OF
STUDENT BUDGET

INST TYPE	MEAN COUNT STD DEV	UP TO 5 PERCENT 1	OVER 5 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	894,52	733,33	797.49
		465	703	1168
		497,98	427,30	463.31
PUBLIC 2-YEAR	2	808,06	627,27	775.71
		220	48	268
		513,79	431,64	504.13
PRIVATE 4-YEAR	3	1166,53	992,76	1037.06
		268	784	1052
		724,11	596,10	635.38
PRIVATE 2-YEAR	4	1494,91	1053,11	1291.12
		31	27	58
		1054,37	580,07	889.49
PROFIT-MAKING	5	1343,38	1353,56	1345.46
		133	34	167
		502,71	537,66	508.43
VOCATIONAL	6	666,88	1500,00	733.04
		12	1	13
		406,43	0,00	453.78
OTHER	7	1169,10	0,00	1169.10
		4	0	4
		475,47	0,00	475.47
COLUMN TOTAL		1009,75	876,68	931.93
		1134	1597	2731
		614,50	542,94	577.36

TABLE B-45

Average Benefits Received by 1972-73 Entering Full-Time Freshman Beneficiaries by Available Institution Aid Funds and Institution Type and Control

DISCRETIONARY AID FUNDS
AS SHARE OF
STUDENT BUDGET

INST TYPE	MEAN COUNT STD DEV	UP TO 5 PERCENT 1	OVER 5 PERCENT 2	ROW TOTAL
PUBLIC 4-YEAR	1	803,60	859,17	844.66
		73	208	281
		667,08	692,10	684.91
PUBLIC 2-YEAR	2	637,17	757,94	668.38
		163	57	220
		645,57	626,26	641.41
PRIVATE 4-YEAR	3	1139,88	1130,92	1133.59
		35	82	116
		943,77	959,63	950.85
PRIVATE 2-YEAR	4	1252,96	390,05	972.43
		13	6	19
		523,45	187,81	602.20
PROFIT-MAKING	5	1095,70	0,00	1095.70
		16	0	16
		336,72	0,00	336.72
VOCATIONAL	6	479,35	300,00	452.44
		9	2	11
		364,96	0,00	340.10
OTHER	7	1980,00	0,00	1980.00
		1	0	1
		1,27	0,00	1.27
COLUMN TOTAL		781,19	895,17	841.98
		309	354	663
		697,80	759,26	732.89

Appendix IV-C

Federal Packaging to Aid Recipients by Student/Family or Institution Attributes and Institution Type and Control

List of Tables

TABLE	
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TABLE C-1

Packaging of Federal Aid to 1972-73 Aided Entering Full-Time Freshmen
by Family Income Quartile
and Institution Type and Control

Public 4-Year

```
                                   FAMILY INCOME
           COUNT   I
           ROW %   IUNDER      $ 7,500- $10,500- OVER          ROW
           COL %   I$ 7,500    $10,499  $15,000  $15,000       TOTAL
           TOT %   I       1  I       2  I       3  I       4  I
           --------I--------I---------I---------I---------I
                  1 I    313  I    201  I    208  I    131  I    853
   FEDERAL AID ONLY I   36,7  I   23,6  I   24.4  I   15.3  I   28.4
                    I   37,2  I   27,0  I   25.9  I   21.2  I
                    I   10,4  I    6,7  I    6.9  I    4.3  I
                   -I--------I---------I---------I---------I
                  2 I    321  I    237  I    190  I     50  I    798
   FED AND NON-FED  I   40,2  I   29,7  I   23.8  I    6.3  I   26.6
                    I   38,1  I   31,8  I   23.7  I    8.2  I
                    I   10,7  I    7,9  I    6.3  I    1,7  I
                   -I--------I---------I---------I---------I
                  3 I    207  I    308  I    405  I    434  I   1354
   NON-FED AID ONLY I   15,3  I   22,7  I   29.9  I   32.1  I   45.1
                    I   24,7  I   41,3  I   50.4  I   70.6  I
                    I    6,9  I   10,2  I   13.5  I   14.4  I
                   -I--------I---------I---------I---------I
            COLUMN       841       746       803       615      3005
             TOTAL      28,0      24,8      26.7      20.5     100.0
```

TABLE C-1, continued

Public 2-Year

FAMILY INCOME

```
         COUNT   I
         ROW %   IUNDER      $ 7,500- $10,500- OVER          ROW
         COL %   I$ 7,500   $10,499  $15,000  $15,000       TOTAL
         TOT %   I     1   I     2   I     3   I     4   I
        --------I--------I--------I--------I--------I
               1 I   166  I   117  I    79  I    33  I     394
FEDERAL AID ONLY I  42,2  I  29,7  I  19.9  I   8,2  I    26.8
                 I  35,0  I  29,1  I  19.0  I  18.1  I
                 I  11,3  I   8,0  I   5.3  I   2.2  I
                -I--------I--------I--------I--------I
               2 I   135  I    73  I    40  I     4  I     252
FED AND NON-FED  I  53,5  I  29,2  I  15.9  I   1.5  I    17.1
                 I  28,3  I  18,2  I   9.6  I   2.0  I
                 I   9,2  I   5,0  I   2.7  I   0.2  I
                -I--------I--------I--------I--------I
               3 I   174  I   212  I   296  I   143  I     825
NON-FED AID ONLY I  21,1  I  25,7  I  35.8  I  17.3  I    56.1
                 I  36,7  I  52,7  I  71.4  I  79.8  I
                 I  11,9  I  14,4  I  20.1  I   9.7  I
                -I--------I--------I--------I--------I
          COLUMN     475      402      414      179        1471
           TOTAL    32,3     27,3     28.2     12.2       100.0
```

TABLE C-1, continued

Private 2-Year

```
                              FAMILY INCOME

          COUNT   I
          ROW %   IUNDER    $ 7,500- $10,500- OVER      ROW
          COL %   I$ 7,500  $10,499  $15,000  $15,000   TOTAL
          TOT %   I      1 I      2 I      3 I      4 I
        ---------I--------I--------I--------I--------I
              1  I     10 I      7 I      7 I      6 I     29
FEDERAL AID ONLY I   33,0 I   23,0 I   23.7 I   20.2 I   21.5
                 I   27,7 I   30,6 I   19.6 I   13.6 I
                 I    7,1 I    5,0 I    5.1 I    4,4 I
                -I--------I--------I--------I--------I
              2  I     16 I      5 I      8 I      7 I     37
FED AND NON-FED  I   43,4 I   14,3 I   22.6 I   19.8 I   26.9
                 I   45,5 I   23,7 I   23.3 I   16.6 I
                 I   11,7 I    3,8 I    6.1 I    5.3 I
                -I--------I--------I--------I--------I
              3  I      9 I     10 I     20 I     31 I     70
NON-FED AID ONLY I   13,4 I   14,4 I   28.8 I   43.4 I   51.5
                 I   26,8 I   45,7 I   57.0 I   69.8 I
                 I    6,9 I    7,4 I   14.9 I   22.4 I
                -I--------I--------I--------I--------I
         COLUMN        35       22       36       44      136
          TOTAL      25,7     16,2     26.0     32.1    100.0
```

TABLE C-1, continued

Private 4-Year

```
                               FAMILY INCOME
               COUNT   I
               ROW %   IUNDER     $ 7,500- $12,500- OVER          ROW
               COL %   I$ 7,500   $10,499  $15,000  $15,000      TOTAL
               TOT %   I      1  I      2  I      3  I      4  I
               --------I--------I--------I--------I--------I
                     1 I     52  I     88  I     92  I     96  I    328
      FEDERAL AID ONLY I   15,9  I   26,8  I   28.1  I   29.2  I   19.3
                       I   16.8  I   21,1  I   18.2  I   20.4  I
                       I    3,1  I    5,2  I    5.4  I    5.6  I
                      -I--------I--------I--------I--------I
                     2 I    212  I    216  I    262  I    142  I    829
      FED AND NON-FED  I   25,6  I   26,0  I   31.4  I   17.1  I   48.7
                       I   68,1  I   51,8  I   51.3  I   30.2  I
                       I   12,4  I   12,6  I   15.3  I    8.3  I
                      -I--------I--------I--------I--------I
                     3 I     47  I    113  I    155  I    232  I    547
      NON-FED AID ONLY I    8,6  I   20,6  I   28.4  I   42.4  I   32.1
                       I   15,2  I   27,1  I   30.5  I   49.4  I
                       I    2,8  I    6,6  I    9.1  I   13.6  I
                      -I--------I--------I--------I--------I
               COLUMN       312       416       508       469      1705
                TOTAL      18,3      24,4      29.8      27.5     100.0
```

TABLE C-1, continued

Profit-Making

```
                              FAMILY INCOME
              COUNT  I
              ROW %  IUNDER     $ 7,500-  $10,500-  OVER         ROW
              COL %  I$ 7,500   $10,499   $15,000   $15,000      TOTAL
              TOT %  I      1  I      2  I      3  I      4  I
            ---------I---------I---------I---------I---------I
                   1 I     65  I     61  I     45  I      8  I    179
    FEDERAL AID ONLY I   36,1  I   34,2  I   25.2  I    4.5  I   43.9
                     I   55,8  I   50,4  I   35.8  I   18.0  I
                     I   15,9  I   15,0  I   11.1  I    2.0  I
                    -I---------I---------I---------I---------I
                   2 I     33  I     18  I     28  I     17  I     96
    FED AND NON-FED  I   34,7  I   18,5  I   29.3  I   17.6  I   23.6
                     I   28,8  I   14,6  I   22.4  I   38.1  I
                     I    8,2  I    4,4  I    6.9  I    4.1  I
                    -I---------I---------I---------I---------I
                   3 I     18  I     42  I     53  I     19  I    132
    NON-FED AID ONLY I   13,4  I   32,0  I   39.8  I   14.7  I   32.5
                     I   15,3  I   34,[illegible] I   41.8  I   43.9  I
                     I    4,4  I   10,4  I   12.9  I    4.8  I
                    -I---------I---------I---------I---------I
              COLUMN      116       121       126        44      407
               TOTAL     28,4      29,8      30.9      10.9    100.0
```

TABLE C-1, continued

Vocational

```
                                 FAMILY INCOME
              COUNT   I
              ROW %   IUNDER     $ 7,500- $10,500- OVER           ROW
              COL %   I$ 7,500   $10,499  $15,000  $15,000        TOTAL
              TOT %   I       1 I       2 I       3 I       4 I
              --------I---------I---------I---------I---------I
                    1 I      63 I      14 I      14 I       4 I      95
    FEDERAL AID ONLY  I    66,1 I    14,5 I    15.0 I     4.4 I    51.0
                      I    69,5 I    44,5 I    33.2 I    19.2 I
                      I    33,7 I     7,4 I     7.7 I     2.3 I
                     -I---------I---------I---------I---------I
                    2 I       7 I       4 I       6 I       2 I      19
    FED AND NON-FED   I    38,6 I    19,7 I    31.9 I     9.8 I    10.2
                      I     8,1 I    12,2 I    14.1 I     8.6 I
                      I     3,9 I     2,0 I     3.3 I     1.0 I
                     -I---------I---------I---------I---------I
                    3 I      20 I      13 I      23 I      16 I      72
    NON-FED AID ONLY  I    28,1 I    18,5 I    31.5 I    21.9 I    38.7
                      I    22,4 I    43,3 I    52.7 I    72.3 I
                      I    10,9 I     7,2 I    12.2 I     8.5 I
                     -I---------I---------I---------I---------I
               COLUMN         90        31        43        22      186
                TOTAL       48,6      16,6      23.1      11.7    100.0
```

TABLE C-1, concluded

Other

```
                                 FAMILY INCOME

              COUNT  I
              ROW %  IUNDER      $ 7,500-  $10,500-  OVER           ROW
              COL %  I$ 7,500    $10,499   $15,000   $15,000        TOTAL
              TOT %  I     1   I     2   I     3   I     4   I
             --------I---------I---------I---------I---------I
                    1 I     9   I    12   I     1   I     5   I      27
   FEDERAL AID ONLY   I  34,1   I  43,5   I   5.4   I  17.0   I    25.7
                      I  43,7   I  27,0   I   6.4   I  26.0   I
                      I   8,8   I  11,2   I   1.4   I   4.4   I
                     -I---------I---------I---------I---------I
                    2 I     4   I    11   I     0   I     1   I      17
   FED AND NON-FED    I  25,6   I  68,2   I   0.0   I   6.2   I    16.1
                      I  20,6   I  26,5   I   0.0   I   5.9   I
                      I   4,1   I  11,0   I   0.0   I   1.0   I
                     -I---------I---------I---------I---------I
                    3 I     7   I    20   I    21   I    12   I      60
   NON-FED AID ONLY   I  12,3   I  33,2   I  34.7   I  19.7   I    58.1
                      I  35,7   I  46,5   I  93.6   I  68.0   I
                      I   7,2   I  19,3   I  20.2   I  11.5   I
                     -I---------I---------I---------I---------I
             COLUMN        21        43        22        17         104
              TOTAL      20,1      41,5      21.6      16.8       100.0
```

TABLE C-2, continued

Private 4-Year

```
                                  SAT SCORE
           COUNT   I
           ROW %   IUNDER     800 TO     950 TO     OVER          ROW
           COL %   I 800      950        1100       1100          TOTAL
           TOT %   I      1 I      2 I       3 I       4 I
          ---------I--------I--------I---------I---------I
               1   I   165  I   60   I    87   I    71   I     382
 FEDERAL AID ONLY  I  43,0  I  15,6  I   22,8  I   18.6  I    19.2
                   I  29,8  I  17,4  I   18.8  I   11.3  I
                   I   8,3  I   3,0  I    4,4  I    3.6  I
                  -I--------I--------I---------I---------I
               2   I   202  I   206  I   216   I   303   I     927
 FED AND NON-FED   I  21,8  I  22,2  I   23.3  I   32.7  I    46.6
                   I  36,6  I  60,2  I   46.6  I   48.0  I
                   I  10,2  I  10,4  I   10.8  I   15.2  I
                  -I--------I--------I---------I---------I
               3   I   136  I   77   I   160   I   257   I     679
 NON-FED AID ONLY  I  27,4  I  11,3  I   23.5  I   37.8  I    34.2
                   I  33,6  I  22,4  I   34.5  I   40.7  I
                   I   9,3  I   3,9  I    8.0  I   12.9  I
                  -I--------I--------I---------I---------I
           COLUMN      553      343       463       631         1989
           TOTAL      27,8     17,2      23.3      31.7        100.0
```

TABLE C-2, continued

Private 2-Year

```
                                     SAT SCORE
               COUNT  I
               ROW %  IUNDER      800 TO     950 TO     OVER              ROW
               COL %  I 800        950       1100       1100             TOTAL
               TOT %  I       1  I       2  I       3  I       4  I
              --------I----------I----------I----------I----------I
                  1   I      22  I      10  I       0  I       0  I       32
    FEDERAL AID ONLY  I    69,2  I    30,8  I     0.0  I     0.0  I     18.7
                      I    26,7  I    15,8  I     0.0  I     0.0  I
                      I    12,9  I     5,8  I     0.0  I     0.0  I
                     -I----------I----------I----------I----------I
                  2   I      19  I      18  I       8  I       2  I       46
    FED AND NON-FED   I    40,6  I    38,9  I    16.6  I     3.9  I     26.9
                      I    22,6  I    28,7  I    56.6  I    14.8  I
                      I    10,9  I    10,5  I     4.5  I     1.1  I
                     -I----------I----------I----------I----------I
                  3   I      42  I      35  I       6  I      10  I       93
    NON-FED AID ONLY  I    45,2  I    37,3  I     6.3  I    11.2  I     54.3
                      I    50,7  I    55,5  I    43.4  I    85.2  I
                      I    24,6  I    20,3  I     3.4  I     6.1  I
                     -I----------I----------I----------I----------I
              COLUMN         82         62         13         12         172
               TOTAL       48,5       36,5        7.9        7.1       100.0
```

TABLE C-2, continued

Profit-Making

```
                                  SAT SCORE
            COUNT   I
            ROW %   IUNDER      800 TO     950 TO     OVER          ROW
            COL %   I 800        950        1100      1100          TOTAL
            TOT %   I       1 I        2 I        3 I        4 I
          ----------I---------I----------I----------I----------I
                  1 I     180 I       21 I        7 I        5 I     213
  FEDERAL AID ONLY  I    84,4 I     10,1 I      3.1 I      2.5 I    45.0
                    I    50,6 I     36,7 I     32.9 I     13.2 I
                    I    38,0 I      4,5 I      1.4 I      1.1 I
                   -I---------I----------I----------I----------I
                  2 I      62 I       18 I        6 I       14 I     100
  FED AND NON-FED   I    62,4 I     18,1 I      5.6 I     13.9 I    21.1
                    I    17,5 I     31,0 I     28.0 I     35.1 I
                    I    13,2 I      3,8 I      1.2 I      2.9 I
                   -I---------I----------I----------I----------I
                  3 I     113 I       19 I        8 I       20 I     160
  NON-FED AID ONLY  I    70,6 I     11.7 I      4.9 I     12.8 I    33.9
                    I    31,8 I     32.3 I     39.1 I     51.7 I
                    I    23,9 I      4,0 I      1.6 I      4.3 I
                   -I---------I----------I----------I----------I
             COLUMN       355         58         20         40       473
              TOTAL      75,1       12,3        4.2        8.4     100.0
```

TABLE C-2, continued

Vocational

```
                             SAT SCORE
         COUNT   I
         ROW %   IUNDER     800 TO    950 TO    OVER         ROW
         COL %   I 800       950       1100     1100         TOTAL
         TOT %   I       1 I       2 I       3 I       4 I
         --------I---------I---------I---------I---------I
             1   I     95  I     16  I      6  I      0  I    117
FEDERAL AID ONLY I   80,8  I   14,0  I    5.1  I    0.0  I   47.3
                 I   48,3  I   59,9  I   33.5  I    0.0  I
                 I   38,2  I    6,6  I    2.4  I    0.0  I
                -I---------I---------I---------I---------I
             2   I     19  I      4  I      0  I      4  I     27
FED AND NON-FED  I   71,2  I   14,3  I    0.0  I   14.5  I   10.8
                 I    9,7  I   13,9  I    0.0  I   59.9  I
                 I    7,7  I    1,5  I    0.0  I    1.6  I
                -I---------I---------I---------I---------I
             3   I     82  I      7  I     12  I      3  I    104
NON-FED AID ONLY I   79,1  I    6,9  I   11.5  I    2.5  I   42.0
                 I   42,0  I   26,2  I   66.5  I   40.1  I
                 I   33,2  I    2,9  I    4.8  I    1.0  I
                -I---------I---------I---------I---------I
         COLUMN       196        27        18         6       248
         TOTAL       79,1      11,1       7.2       2.6     100.0
```

TABLE C-2, concluded

Other

```
                               SAT SCORE

          COUNT  I
          ROW %  IUNDER      800 TO    950 TO    OVER         ROW
          COL %  I 800        950       1100     1100        TOTAL
          TOT %  I       1 I       2 I       3 I       4 I
         --------I---------I---------I---------I---------I
              1  I      15 I      13 I       6 I       1 I      35
FEDERAL AID ONLY I    41,6 I    37,1 I    17.1 I     4.1 I    31.3
                 I    30,1 I    34,6 I    51.1 I    10.2 I
                 I    13,0 I    11,6 I     5.4 I     1.3 I
                -I---------I---------I---------I---------I
              2  I       6 I      11 I       0 I       0 I      17
FED AND NON-FED  I    34,5 I    65,5 I     0.0 I     0.0 I    14.9
                 I    11,9 I    29,1 I     0.0 I     0.0 I
                 I     5,1 I     9,8 I     0.0 I     0.0 I
                -I---------I---------I---------I---------I
              3  I      28 I      14 I       6 I      13 I      60
NON-FED AID ONLY I    46,7 I    22,7 I     9.5 I    21.1 I    53.8
                 I    58,1 I    36,4 I    48,9 I    39.8 I
                 I    25,1 I    12,2 I     5.1 I    11.3 I
                -I---------I---------I---------I---------I
         COLUMN         49        38        12        14       112
          TOTAL       43,3      33,6      10.5      12.6     100.0
```

TABLE C-3

Packaging of Federal Aid to 1972-73 Aided Entering Full-Time Freshmen by Racial/Ethnic Group and Institution Type and Control

Public 4-Year

```
                                      RACIAL/ETHNIC GROUP
                 COUNT   I
                 ROW %   IWHITE      BLACK      HISPANIC OTHER          ROW
                 COL %   I                                              TOTAL
                 TOT %   I       1 I        2 I        3 I        4 I
                 --------I---------I----------I----------I---------I
                       1 I     722 I      167 I       46 I       31 I     966
     FEDERAL AID ONLY    I    74,7 I     17,3 I      4.8 I      3.2 I    28.5
                         I    25,4 I     50,0 I     45.9 I     27.1 I
                         I    21,3 I      4,9 I      1.4 I      0.9 I
                        -I---------I----------I----------I---------I
                       2 I     687 I      113 I       42 I       34 I     876
     FED AND NON-FED     I    78,5 I     12,9 I      4.8 I      3.9 I    25.8
                         I    24,2 I     33,9 I     41.4 I     29.6 I
                         I    20,2 I      3,3 I      1.2 I      1.0 I
                        -I---------I----------I----------I---------I
                       3 I    1436 I       54 I       13 I       50 I    1552
     NON-FED AID ONLY    I    92,5 I      3,5 I      0.8 I      3.2 I    45.7
                         I    50,5 I     16,1 I     12.7 I     43.4 I
                         I    42,3 I      1,6 I      0.4 I      1.5 I
                        -I---------I----------I----------I---------I
                 COLUMN       2845        334        101        114      3394
                  TOTAL       83,8        9,8        3.0        3.4     100.0
```

TABLE C-3, continued

Public 2-Year

```
                         RACIAL/ETHNIC GROUP
             COUNT  I
             ROW %  IWHITE     BLACK     HISPANIC OTHER       ROW
             COL %  I                                         TOTAL
             TOT %  I       1 I       2 I       3 I       4 I
            --------I---------I---------I---------I---------I
                  1 I    372  I     64  I     30  I      7  I    474
  FEDERAL AID ONLY  I   78,5  I   13,5  I    6,4  I    1.5  I   27.5
                    I   26,0  I   58,0  I   31.0  I    8.9  I
                    I   21,6  I    3,7  I    1.8  I    0.4  I
                   -I---------I---------I---------I---------I
                  2 I    221  I     15  I     38  I     15  I    289
  FED AND NON-FED   I   76,6  I    5,0  I   13.2  I    5.1  I   16.7
                    I   15,4  I   13,2  I   38.8  I   18.1  I
                    I   12,8  I    0,8  I    2.2  I    0,9  I
                   -I---------I---------I---------I---------I
                  3 I    841  I     32  I     30  I     60  I    962
  NON-FED AID ONLY  I   87,4  I    3,3  I    3.1  I    6.2  I   55.8
                    I   58,6  I   28,8  I   30.2  I   73.0  I
                    I   48,7  I    1,8  I    1.7  I    3.5  I
                   -I---------I---------I---------I---------I
            COLUMN      1434       110        98        82      1725
             TOTAL      83,1       6,4       5.7       4.8     100.0
```

TABLE C-3, continued

Private 4-Year

```
                          RACIAL/ETHNIC GROUP

           COUNT   I
           ROW %   IWHITE      BLACK     HISPANIC OTHER         ROW
           COL %   I                                            TOTAL
           TOT %   I       1 I       2 I       3 I       4 I
        --------I--------I--------I--------I--------I
               1 I     311 I      47 I       3 I      17 I     378
FEDERAL AID ONLY I    82,3 I    12,5 I     0.8 I     4.4 I    19.2
                 I    18,2 I    31,4 I    13.7 I    18.7 I
                 I    15,8 I     2,4 I     0.1 I     0.8 I
                -I--------I--------I--------I--------I
               2 I     784 I      81 I      13 I      45 I     923
FED AND NON-FED  I    84,9 I     8,8 I     1.4 I     4.9 I    46.9
                 I    45,9 I    54,1 I    61.9 I    50.8 I
                 I    39,8 I     4,1 I     0.7 I     2.3 I
                -I--------I--------I--------I--------I
               3 I     612 I      22 I       5 I      27 I     666
NON-FED AID ONLY I    91,8 I     3.2 I     0.8 I     4.1 I    33.9
                 I    35,8 I    14,4 I    25.4 I    30.5 I
                 I    31,1 I     1,1 I     0.3 I     1.4 I
                -I--------I--------I--------I--------I
          COLUMN      1706       150        21        89      1967
           TOTAL      86,7       7,6       1.1       4.5     100.0
```

TABLE C-3, continued

Private 2-Year

```
                                RACIAL/ETHNIC GROUP
                COUNT    I
                ROW %    IWHITE     BLACK     HISPANIC OTHER         ROW
                COL %    I                                           TOTAL
                TOT %    I      1  I      2  I      3  I      4  I
                 --------I---------I---------I---------I---------I
                    1    I    35   I     2   I     0   I     0   I     37
   FEDERAL AID ONLY      I  95,6   I   4,4   I   0.0   I   0.0   I   21.8
                         I  21,7   I  50,5   I   0.0   I   0.0   I
                         I  20,8   I   1,0   I   0.2   I   0.0   I
                        -I---------I---------I---------I---------I
                    2    I    39   I     2   I     1   I     0   I     42
   FED AND NON-FED       I  94,1   I   3,8   I   2.0   I   0.0   I   24.6
                         I  24,1   I  49,5   I 100.0   I   0.0   I
                         I  23,1   I   0,9   I   0.5   I   0.0   I
                        -I---------I---------I---------I---------I
                    3    I    89   I     0   I     0   I     2   I     91
   NON-FED AID ONLY      I  97,3   I   0,0   I   0.0   I   2.7   I   53.6
                         I  54,3   I   0,0   I   0.0   I 100.0   I
                         I  52,2   I   0,0   I   0.0   I   1.5   I
                        -I---------I---------I---------I---------I
                COLUMN       164         3         1         2       170
                 TOTAL      96,2       1,9       0.5       1.5     100.0
```

TABLE C-3, continued

Profit-Making

```
                              RACIAL/ETHNIC GROUP
              COUNT  I
              ROW %  IWHITE    BLACK    HISPANIC OTHER         ROW
              COL %  I                                          TOTAL
              TOT %  I      1  I      2  I      3  I      4  I
            ---------I---------I---------I---------I---------I
                   1 I   158   I    40   I    13   I     5   I   215
  FEDERAL AID ONLY   I  73,4   I  18,4   I   6.1   I   2.1   I  44.9
                     I  40,7   I  64,5   I  82.2   I  32.6   I
                     I  32,9   I   8,2   I   2.8   I   1.0   I
                    -I---------I---------I---------I---------I
                   2 I    84   I    10   I     0   I     7   I   101
  FEC AND NON-FED    I  82,6   I  10,1   I   0.0   I   7.2   I  21.1
                     I  21,6   I  16,7   I   0.0   I  51.6   I
                     I  17,4   I   2,1   I   0.0   I   1.5   I
                    -I---------I---------I---------I---------I
                   3 I   146   I    11   I     3   I     2   I   163
  NON-FED AID ONLY   I  89,8   I   7,1   I   1.8   I   1.4   I  34.0
                     I  37,7   I  18,8   I  17.8   I  15.8   I
                     I  30,5   I   2,4   I   0.6   I   0.5   I
                    -I---------I---------I---------I---------I
              COLUMN     388        61        16        14       479
              TOTAL     80,9      12,8       3.3       3.0     100.0
```

TABLE C-3, concluded

Other

```
                              RACIAL/ETHNIC GROUP
              COUNT  I
              ROW %  IWHITE     BLACK     HISPANIC OTHER        ROW
              COL %  I                                         TOTAL
              TOT %  I       1 I       2 I       3 I       4 I
            ---------I---------I---------I---------I---------I
                  1  I      23 I       2 I       5 I       0 I    30
   FEDERAL AID ONLY  I    79,1 I     5,5 I   15.4  I     0.0 I  27.2
                     I    24,2 I    25,6 I  100.0  I     0.0 I
                     I    21,5 I     1,5 I    4.2  I     0.0 I
                    -I---------I---------I---------I---------I
                  2  I      14 I       5 I       0 I       0 I    19
   FED AND NON-FED   I    75,6 I    25,0 I     0.0 I     0.0 I  17.4
                     I    14,7 I    74,4 I     0.0 I     0.0 I
                     I    13,0 I     4,3 I     0.0 I     0.0 I
                    -I---------I---------I---------I---------I
                  3  I      59 I       0 I       0 I       1 I    60
   NON-FED AID ONLY  I    98,1 I     0,0 I     0.0 I     1.9 I  55.4
                     I    61,1 I     0,0 I     0.0 I   100.0 I
                     I    54,3 I     0,0 I     0.0 I     1.1 I
                    -I---------I---------I---------I---------I
             COLUMN         97         6         5         1     109
              TOTAL       88,9       5,8       4.2       1.1   100.0
```

TABLE C-3, continued

Vocational

```
                          RACIAL/ETHNIC GROUP
             COUNT  I
             ROW %  IWHITE     BLACK     OTHER         ROW
             COL %  I                                  TOTAL
             TOT %  I       1 I       2 I       4 I
            --------I---------I---------I---------I
                  1 I    107  I     10  I       3 I    119
FEDERAL AID ONLY    I   89,4  I    8,3  I    2.4  I    47.7
                    I   48,3  I   53,9  I   25.6  I
                    I   42,6  I    3,9  I    1.1  I
                   -I---------I---------I---------I
                  2 I     25  I      1  I       0 I     27
FED AND NON-FED     I   95,2  I    4,8  I    0.0  I    10.7
                    I   11,5  I    7,0  I    0.0  I
                    I   10,2  I    0,5  I    0.0  I
                   -I---------I---------I---------I
                  3 I     89  I      7  I       8 I    104
NON-FED AID ONLY    I   85,2  I    6,9  I    7.9  I    41.6
                    I   40,2  I   39,1  I   74.4  I
                    I   35,4  I    2,9  I    3.3  I
                   -I---------I---------I---------I
             COLUMN      221        18         11       250
              TOTAL     88,2       7,3        4.4     100.0
```

TABLE C-4

Packaging of Federal Aid to 1972-73 Aided Entering Full-Time Freshmen by Median Family Income at Postsecondary Institution and Institution Type and Control

Public 4-Year

```
                          MEDIAN FAMILY INCOME
                COUNT  I
                ROW %  IUNDER     $ 7,500- $12,500-    ROW
                COL %  I$ 7,500   $10,500  $15,000    TOTAL
                TOT %  I    1   I    2    I    3    I
              ---------I--------I---------I---------I
                    1  I   211  I    412  I   176   I   798
    FEDERAL AID ONLY   I  26.4  I   51,6  I  22.0   I  28.7
                       I  40,9  I   28,3  I  21.7   I
                       I   7,6  I   14,8  I   6.3   I
                      -I--------I---------I---------I
                    2  I    91  I    359  I   270   I   721
    FED AND NON-FED    I  12,7  I   49,9  I  37.4   I  25.9
                       I  17,7  I   24,7  I  33,3   I
                       I   3,3  I   12,9  I   9,7   I
                      -I--------I---------I---------I
                    3  I   213  I    684  I   365   I  1262
    NON-FED AID ONLY   I  16,9  I   54,2  I  28.9   I  45.4
                       I  41,4  I   47,0  I  45.1   I
                       I   7,7  I   24,6  I  13.1   I
                      -I--------I---------I---------I
               COLUMN     515       1455      811      2781
                TOTAL     18,5      52,3      29.1    100.0
```

TABLE C-4, continued

Public 2-Year

```
                         MEDIAN FAMILY INCOME
             COUNT  I
             ROW %  IUNDER      $ 7,500- $12,500-    ROW
             COL %  I$ 7,500   $10,500  $15,000    TOTAL
             TOT %  I      1  I      2  I      3  I
          --------I--------I--------I--------I
                 1  I    152  I    242  I      9  I    403
  FEDERAL AID ONLY  I   37,8  I   60,1  I    2.2  I   26.7
                    I   27,2  I   27,1  I   16.2  I
                    I   10,1  I   16,1  I    0,6  I
                  -I--------I--------I--------I
                 2  I    117  I    166  I      6  I    289
   FED AND NON-FED  I   40,5  I   57,5  I    2.0  I   19.2
                    I   21,0  I   18,6  I   10.6  I
                    I    7,8  I   11,0  I    0.4  I
                  -I--------I--------I--------I
                 3  I    290  I    485  I     40  I    814
  NON-FED AID ONLY  I   35,6  I   59,5  I    4.9  I   54.1
                    I   51,8  I   54,3  I   73.2  I
                    I   19,2  I   32,2  I    2.6  I
                  -I--------I--------I--------I
            COLUMN       559       893        54     1506
             TOTAL      37,1      59,3       3.6    100.0
```

TABLE C-4, continued

Private 4-Year

```
                         MEDIAN FAMILY INCOME
           COUNT  I
           ROW %  IUNDER     $ 7,500-  $10,500-    ROW
           COL %  I$ 7,500   $10,500   $15,000     TOTAL
           TOT %  I     1   I     2   I     3   I
         ---------I---------I---------I---------I
               1  I    65   I   128   I   155   I    347
FEDERAL AID ONLY  I  18.6   I  36.7   I  44.6   I   19.2
                  I  33.6   I  19.0   I  16.3   I
                  I   3.6   I   7.0   I   8.5   I
                 -I---------I---------I---------I
               2  I    78   I   344   I   456   I    879
FED AND NON-FED   I   8.9   I  39.2   I  51.9   I   48.5
                  I  40.5   I  51.3   I  48.1   I
                  I   4.3   I  19.0   I  25.2   I
                 -I---------I---------I---------I
               3  I    50   I   199   I   338   I    587
NON-FED AID ONLY  I   8.5   I  33.9   I  57.5   I   32.4
                  I  25.9   I  29.7   I  35.6   I
                  I   2.8   I  11.0   I  18.6   I
                 -I---------I---------I---------I
          COLUMN      193       671       949       1813
           TOTAL     10.6      37.0      52.3      100.0
```

TABLE C-4, continued

Private 2-Year

```
                         MEDIAN FAMILY INCOME
                 COUNT  I
                 ROW %  IUNDER      $ 7,500- $12,500-   ROW
                 COL %  I$ 7,500   $10,500  $15,000   TOTAL
                 TOT %  I      1  I      2  I      3  I
                --------I---------I---------I---------I
                      1 I      5  I     19  I      6  I     30
     FEDERAL AID ONLY   I   15,7  I   64,2  I   20.1  I   18.7
                        I   22,6  I   17,8  I   19.3  I
                        I    2,9  I   12,0  I    3.8  I
                       -I---------I---------I---------I
                      2 I      2  I     31  I      9  I     45
     FED AND NON-FED    I    4,0  I   75,3  I   20.7  I   28.4
                        I    8,8  I   31.7  I   30.3  I
                        I    1,1  I   21,4  I    5.9  I
                       -I---------I---------I---------I
                      3 I     14  I     55  I     16  I     84
     NON-FED AID ONLY   I   16,9  I   64,6  I   18.5  I   52.9
                        I   66,6  I   50,5  I   50.4  I
                        I    8,9  I   34.1  I    9.8  I
                       -I---------I---------I---------I
                COLUMN        21       108        31      160
                 TOTAL      13,0      67,6      19.4    100.0
```

TABLE C-4, continued

Profit-Making

```
                              MEDIAN FAMILY INCOME
                 COUNT   I
                 ROW %   IUNDER      $ 7,500- $12,500-    ROW
                 COL %   I$ 7,500   $10,500  $15,000    TOTAL
                 TOT %   I     1   I     2   I     3   I
                 --------I---------I---------I---------I
                       1 I    76   I    27   I     4   I   107
      FEDERAL AID ONLY I  71,0   I  25,3   I   3.7   I  48.9
                         I  66,1   I  27,6   I  69,7   I
                         I  34,7   I  12,4   I   1.8   I
                        -I---------I---------I---------I
                       2 I    22   I    32   I     2   I    53
      FED AND NON-FED   I  36,7   I  60,0   I   3.2   I  24.4
                         I  17,1   I  32,6   I  30.3   I
                         I   9,0   I  14,6   I   0,8   I
                        -I---------I---------I---------I
                       3 I    19   I    39   I     0   I    58
      NON-FED AID ONLY I  33,0   I  67,0   I   0.0   I  26.7
                         I  16,8   I  39,9   I   0.0   I
                         I   8,8   I  17,9   I   0.0   I
                        -I---------I---------I---------I
                  COLUMN      115        98         6      218
                   TOTAL     52.5      44.9       2.6    100.0
```

TABLE C-4, continued

Vocational

```
                         MEDIAN FAMILY INCOME
                COUNT   I
                ROW %   IUNDER      $ 7,500-    ROW
                COL %   I$ 7,500    $10,500     TOTAL
                TOT %   I     1   I      2   I
                --------I---------I---------I
                    1   I    20   I      3   I     23
   FEDERAL AID ONLY     I  85,8   I   14,2   I   35.4
                        I  37,6   I   26,2   I
                        I  30,4   I    5,0   I
                       -I---------I---------I
                    2   I     6   I      0   I      6
   FED AND NON-FED      I 100,0   I    0,0   I    8.5
                        I  10,5   I    0,0   I
                        I   8,5   I    0,0   I
                       -I---------I---------I
                    3   I    27   I      9   I     37
   NON-FED AID ONLY     I  74,7   I   25,3   I   56.1
                        I  51,9   I   73,8   I
                        I  41,9   I   14,2   I
                       -I---------I---------I
                COLUMN       53          13          65
                 TOTAL     80,8        19,2       100.0
```

TABLE C-4, concluded

Other

```
                         MEDIAN FAMILY INCOME
           COUNT  I
           ROW %  IUNDER      $ 7,500- $10,500-    ROW
           COL %  I$ 7,500   $10,500  $15,000    TOTAL
           TOT %  I      1  I      2  I      3  I
          --------I---------I---------I---------I
               1  I      5  I      1  I      0  I      6
FEDERAL AID ONLY  I   77,4  I   22,6  I    0.0  I   42.8
                  I  100,0  I   20,0  I    0.0  I
                  I   33,1  I    9,6  I    0.0  I
                 -I---------I---------I---------I
               2  I      0  I      2  I      1  I      3
FED AND NON-FED   I    0,0  I   61,8  I   38.2  I   24.5
                  I    0,0  I   31,4  I   50.1  I
                  I    0,0  I   15,1  I    9.4  I
                 -I---------I---------I---------I
               3  I      0  I      3  I      1  I      5
NON-FED AID ONLY  I    0,0  I   71,5  I   28.5  I   32.7
                  I    0,0  I   48,5  I   49.9  I
                  I    0,0  I   23,4  I    9.3  I
                 -I---------I---------I---------I
          COLUMN         5         7          3       14
           TOTAL      33,1      48,2       18.7    100.0
```

TABLE C-5

Packaging of Federal Aid to 1972-73 Aided Entering Full-Time Freshmen by Median Freshman Achievement/Ability Score at Postsecondary Institution and Institution Type and Control

Public 4-Year

```
                          MEDIAN SAT SCORE
           COUNT   I
           ROW %   IUNDER     800 TO    950 TO    OVER          ROW
           COL %   I 800       950       1100     1100          TOTAL
           TOT %   I     1  I     2  I     3  I     4  I
        --------I--------I--------I--------I--------I
               1   I   116  I   232  I   531  I    96  I     975
FEDERAL AID ONLY   I  11.9  I  23.8  I  54.4  I   9.9  I    28.3
                   I  31.8  I  37.6  I  27.1  I  19.3  I
                   I   3.4  I   6.8  I  15.4  I   2.8  I
                  -I--------I--------I--------I--------I
               2   I   114  I   131  I   473  I   174  I     892
FED AND NON-FED    I  12.8  I  14.6  I  53.0  I  19.5  I    25.9
                   I  31.4  I  21.2  I  24.1  I  34.9  I
                   I   3.3  I   3.8  I  13.7  I   5.1  I
                  -I--------I--------I--------I--------I
               3   I   134  I   254  I   956  I   229  I    1574
NON-FED AID ONLY   I   8.5  I  16.2  I  60.8  I  14.5  I    45.7
                   I  36.8  I  41.2  I  48.8  I  45.9  I
                   I   3.9  I   7.4  I  27.8  I   6.7  I
                  -I--------I--------I--------I--------I
           COLUMN      364      617      1960      499        3441
            TOTAL     10.6     17.9      57.0     14.5       100.0
```

TABLE C-5, continued

Public 2-Year

```
                           MEDIAN SAT SCORE
           COUNT  I
           ROW %  IUNDER      800 TO     950 TO       ROW
           COL %  I 800        950        1100        TOTAL
           TOT %  I       1  I       2  I       3  I
        --------I--------I---------I---------I
              1  I      50  I     432  I       2  I     484
 FEDERAL AID ONLY I    10,3  I    89,2  I     0.5  I    27.4
                  I    35,0  I    26,9  I    10.9  I
                  I     2,8  I    24,4  I     0.1  I
                 -I--------I---------I---------I
              2  I       8  I     295  I       2  I     305
 FED AND NON-FED  I     2,6  I    96,8  I     0.6  I    17.3
                  I     5,5  I    18,4  I     9.2  I
                  I     0,4  I    16,7  I     0.1  I
                 -I--------I---------I---------I
              3  I      85  I     876  I      17  I     978
 NON-FED AID ONLY I     8,7  I    89,6  I     1.7  I    55.3
                  I    59,5  I    54,6  I    79.8  I
                  I     4,8  I    49,6  I     0.9  I
                 -I--------I---------I---------I
          COLUMN        143        1603          21      1767
           TOTAL        8,1        90,7         1.2     100.0
```

TABLE C-5, continued

Private 4-Year

```
                           MEDIAN SAT SCORE
         COUNT  I
         ROW %  IUNDER     800 TO    950 TO    OVER          ROW
         COL %  I 800       950       1100     1100          TOTAL
         TOT %  I      1  I      2  I      3  I      4  I
        --------I---------I---------I---------I---------I
              1 I     41  I     96  I    172  I     74  I    382
FEDERAL AID ONLY I   10,7  I   25,1  I   45.0  I   19.2  I   19.1
                I   41,6  I   28,7  I   16.9  I   13.5  I
                I    2,0  I    4,8  I    8.6  I    3.7  I
               -I---------I---------I---------I---------I
              2 I     29  I    142  I    475  I    287  I    934
FED AND NON-FED I    3,2  I   15,3  I   50.8  I   30.8  I   46.7
                I   29,9  I   42,6  I   46.5  I   52.6  I
                I    1,5  I    7,1  I   23.7  I   14.4  I
               -I---------I---------I---------I---------I
              3 I     28  I     96  I    374  I    185  I    683
NON-FED AID ONLY I    4,1  I   14,1  I   54.7  I   27.1  I   34.2
                I   28,5  I   28,7  I   36.6  I   34.0  I
                I    1,4  I    4,8  I   18.7  I    9.3  I
               -I---------I---------I---------I---------I
         COLUMN       98       334      1022       546        1999
          TOTAL      4,9      16,7      51.1      27.3       100.0
```

TABLE C-5, continued

Private 2-Year

```
                      MEDIAN SAT SCORE
             COUNT  I
             ROW %  IUNDER      800 TO     950 TO        ROW
             COL %  I 800        950        1100         TOTAL
             TOT %  I       1  I       2  I       3  I
          ----------I----------I----------I----------I
                  1 I       7  I      30  I       0  I     37
 FEDERAL AID ONLY   I    18,1  I    81,9  I     0.0  I   21.0
                    I    47,6  I    20,3  I     0.0  I
                    I     3,8  I    17,2  I     0.0  I
                   -I----------I----------I----------I
                  2 I       3  I      38  I       6  I     47
 FED AND NON-FED    I     6,2  I    82,8  I    13.2  I   26.5
                    I    19,9  I    25,3  I    47.9  I
                    I     1,6  I    21,4  I     3.5  I
                   -I----------I----------I----------I
                  3 I       5  I      81  I       7  I     93
 NON-FED AID ONLY   I     5,0  I    87,8  I     7.2  I   52.5
                    I    32,5  I    54,4  I    52.1  I
                    I     2,6  I    46,0  I     3.8  I
                   -I----------I----------I----------I
            COLUMN         14        149         13       176
             TOTAL        8,0       84,7        7.3     100.0
```

TABLE C-5, continued

Profit-Making

```
                         MEDIAN SAT SCORE
           COUNT   I
           ROW %   IUNDER     800 TO    950 TO      ROW
           COL %   I 800       950       1100      TOTAL
           TOT %   I       1 I       2 I       3 I
        --------I--------I--------I--------I
               1 I   205 I    10 I      3 I    218
FEDERAL AID ONLY I  93,9 I   4,6 I    1.5 I   45.2
                 I  46,7 I  54,4 I   12.7 I
                 I  42,5 I   2,1 I    0.7 I
                -I--------I--------I--------I
               2 I    82 I     3 I     16 I    101
FED AND NON-FED  I  81,3 I   2,9 I   15.9 I   21.0
                 I  18,7 I  15,8 I   63.9 I
                 I  17,0 I   0,6 I    3.3 I
                -I--------I--------I--------I
               3 I   152 I     5 I      6 I    163
NON-FED AID ONLY I  93,0 I   3,4 I    3.6 I   33.8
                 I  34,6 I  29,8 I   23.4 I
                 I  31,4 I   1,1 I    1.2 I
                -I--------I--------I--------I
          COLUMN     439      18       25      482
          TOTAL     91,0     3,8      5.2    100.0
```

TABLE C-5, continued

Vocational

```
                      MEDIAN SAT SCORE
         COUNT  I
         ROW %  IUNDER     800 TO      ROW
         COL %  I 800      950         TOTAL
         TOT %  I      1  I      2  I
         --------I--------I--------I
             1  I    112  I      7  I    119
 FEDERAL AID ONLY I   93,9  I    6,1  I   47.5
                I   47,6  I   46,3  I
                I   44,6  I    2,9  I
               -I--------I--------I
             2  I     25  I      2  I     27
 FED AND NON-FED I   93,4  I    6,6  I   10.6
                I   10,6  I   11,3  I
                I    9,9  I    0,7  I
               -I--------I--------I
             3  I     99  I      7  I    105
 NON-FED AID ONLY I   93,7  I    6,3  I   41.9
                I   41,9  I   42,5  I
                I   39,3  I    2,7  I
               -I--------I--------I
        COLUMN       236        15       252
         TOTAL      93,8       6,2     100.0
```

TABLE C-5, concluded

Other

```
                              MEDIAN SAT SCORE
            COUNT  I
            ROW %  IUNDER      800 TO    950 TO       ROW
            COL %  I 800       950       1100         TOTAL
            TOT %  I       1  I       2 I       3 I
           --------I---------I---------I---------I
                1  I     35  I       0 I       1 I      36
  FEDERAL AID ONLY I   96,3  I     0,0 I    3.7  I    31.4
                   I   33,7  I     0,0 I   17.1  I
                   I   30,2  I     0,0 I    1.2  I
                  -I---------I---------I---------I
                2  I     17  I       1 I       1 I      19
  FED AND NON-FED  I   87,7  I     5,3 I    6.8  I    16.4
                   I   16,1  I    24,3 I   16.6  I
                   I   14,4  I     0,9 I    1.1  I
                  -I---------I---------I---------I
                3  I     52  I       3 I       5 I      60
  NON-FED AID ONLY I   86,1  I     5,4 I    8.6  I    52.2
                   I   50,2  I    75,7 I   66.2  I
                   I   45,0  I     2,8 I    4.5  I
                  -I---------I---------I---------I
           COLUMN       103          4        8        115
           TOTAL       89,5        3,7      6.8      100.0
```

TABLE C-6

Packaging of Federal Aid to 1972-73 Aided Entering Full-Time Freshmen by Institution Tuition Dependence and Institution Type and Control

Public 4-Year

```
                         TUITION AS SHARE OF
                         INSTRUCTIONAL BUDGET

           COUNT   I
           ROW %   IUP TO 20 20 TO 60 OVER 60      ROW
           COL %   I PERCENT  PERCENT PERCENT     TOTAL
           TOT %   I       1 I       2 I       3 I
           --------I---------I---------I---------I
               1   I     183 I     672 I      48 I     903
 FEDERAL AID ONLY  I    20,3 I    74,4 I     5.3 I    28.6
                   I    29,1 I    29,0 I    23.6 I
                   I     5,8 I    21,3 I     1.5 I
                  -I---------I---------I---------I
               2   I     145 I     618 I      62 I     825
 FED AND NON-FED   I    17,6 I    74,9 I     7.5 I    26.2
                   I    23,0 I    26,6 I    30.6 I
                   I     4,6 I    19,6 I     2.0 I
                  -I---------I---------I---------I
               3   I     302 I    1031 I      92 I    1425
 NON-FED AID ONLY  I    21,2 I    72,3 I     6.5 I    45.2
                   I    47,9 I    44,4 I    45.8 I
                   I     9,6 I    32,7 I     2.9 I
                  -I---------I---------I---------I
           COLUMN        630      2321       202      3152
           TOTAL        20,0      73,6       6.4     100.0
```

TABLE C-6, continued

Private 4-Year

```
                        TUITION AS SHARE OF
                        INSTRUCTIONAL BUDGET

             COUNT   I
             ROW %   IUP TO 20 20 TO 60 OVER 60     ROW
             COL %   I PERCENT  PERCENT PERCENT    TOTAL
             TOT %   I     1   I    2   I    3   I
             --------I---------I--------I--------I
                  1  I     3   I    74  I   297  I    373
  FEDERAL AID ONLY   I   0,7   I  19,8  I  79.5  I   19.0
                     I  17,0   I  27,5  I  17.7  I
                     I   0,1   I   3,8  I  15.1  I
                    -I---------I--------I--------I
                  2  I     3   I   111  I   816  I    930
  FED AND NON-FED    I   0,3   I  11,9  I  87.7  I   47.3
                     I  20,4   I  41,2  I  48.5  I
                     I   0,2   I   5,6  I  41.5  I
                    -I---------I--------I--------I
                  3  I     9   I    84  I   568  I    662
  NON-FED AID ONLY   I   1,4   I  12,7  I  85.9  I   33.7
                     I  62,6   I  31,3  I  33.8  I
                     I   0,5   I   4,3  I  28.9  I
                    -I---------I--------I--------I
            COLUMN        15       269     1681      1965
             TOTAL       0,8      13,7     85.5     100.0
```

TABLE C-6, continued

Public 2-Year

```
                             TUITION AS SHARE OF
                             INSTRUCTIONAL BUDGET

                  COUNT   I
                  ROW %   IUP TO 20  20 TO 60 OVER 60     ROW
                  COL %   I PERCENT  PERCENT  PERCENT    TOTAL
                  TOT %   I     1   I     2   I     3   I
                  --------I---------I---------I---------I
                       1  I   296   I   108   I    41   I   445
      FEDERAL AID ONLY    I  66,5   I  24,3   I   9.2   I  27.0
                          I  29,4   I  20,8   I  34.2   I
                          I  18,0   I   6,6   I   2.5   I
                         -I---------I---------I---------I
                       2  I   177   I   107   I    16   I   300
      FED AND NON-FED     I  59,1   I  35,6   I   5.3   I  18.2
                          I  17,6   I  20,5   I  13.3   I
                          I  10,8   I   6,5   I   1.0   I
                         -I---------I---------I---------I
                       3  I   533   I   305   I    63   I   901
      NON-FED AID ONLY    I  59,1   I  33,9   I   7.0   I  54.7
                          I  53,0   I  58,7   I  52.6   I
                          I  32,4   I  18,5   I   3.8   I
                         -I---------I---------I---------I
                  COLUMN     1006       520       120      1646
                  TOTAL      61,1      31,6       7.3     100.0
```

TABLE C-6, continued

Private 2-Year

```
                     TUITION AS SHARE OF
                     INSTRUCTIONAL BUDGET

           COUNT   I
           ROW %   I20 TO 60 OVER 60       ROW
           COL %   I PERCENT PERCENT      TOTAL
           TOT %   I     2   I     3   I
           --------I---------I---------I
               1   I     6   I    27   I     33
 FEDERAL AID ONLY  I  17,8   I  82,2   I   19.7
                   I  18,2   I  20,0   I
                   I   3,5   I  16,2   I
                  -I---------I---------I
               2   I     8   I    37   I     45
 FED AND NON-FED   I  18,4   I  81,6   I   27.2
                   I  26,0   I  27,5   I
                   I   5,0   I  22,2   I
                  -I---------I---------I
               3   I    18   I    71   I     89
 NON-FED AID ONLY  I  20,1   I  79,9   I   53.1
                   I  55,7   I  52,5   I
                   I  10,7   I  42,4   I
                  -I---------I---------I
          COLUMN        32       135        167
           TOTAL      19,2      80,8      100.0
```

TABLE C-6, continued

Profit-Making

```
                          TUITION AS SHARE OF
                          INSTRUCTIONAL BUDGET

                  COUNT  I
                  ROW %  I20 TO 60 OVER 60      ROW
                  COL %  I PERCENT PERCENT     TOTAL
                  TOT %  I     2  I     3  I
                 --------I--------I--------I
                      1  I     4  I    90  I     94
      FEDERAL AID ONLY   I   4,1  I  95,9  I   47.6
                         I 100,0  I  46,6  I
                         I   1,9  I  45,7  I
                        -I--------I--------I
                      2  I     0  I    48  I     48
      FED AND NON-FED    I   0,0  I 100,0  I   24.2
                         I   0,0  I  24,7  I
                         I   0,0  I  24,2  I
                        -I--------I--------I
                      3  I     0  I    56  I     56
      NON-FED AID ONLY   I   0,0  I 100,0  I   28.2
                         I   0,0  I  28,7  I
                         I   0,0  I  28,2  I
                        -I--------I--------I
                 COLUMN        4      193       197
                  TOTAL      1,9     98,1     100.0
```

TABLE C-6, continued

Vocational

```
                        TUITION AS SHARE OF
                        INSTRUCTIONAL BUDGET
         COUNT   I
         ROW %   IUP TO 20 20 TO 60 OVER 60      ROW
         COL %   I PERCENT  PERCENT PERCENT     TOTAL
         TOT %   I     1   I     2   I     3   I
        ---------I---------I---------I---------I
               1 I     4   I     3   I    18   I    25
FEDERAL AID ONLY I  17.5   I  11.8   I  70.7   I  36.1
                 I  52.3   I  39.5   I  33.0   I
                 I   6.3   I   4.2   I  25.5   I
                -I---------I---------I---------I
               2 I     2   I     0   I     4   I     6
 FED AND NON-FED I  31.9   I   0.0   I  68.1   I   8.0
                 I  21.3   I   0.0   I   7.1   I
                 I   2.6   I   0.0   I   5.5   I
                -I---------I---------I---------I
               3 I     2   I     4   I    32   I    38
NON-FED AID ONLY I   5.7   I  11.6   I  82.7   I  55.9
                 I  26.4   I  60.5   I  59.9   I
                 I   3.2   I   6.5   I  46.2   I
                -I---------I---------I---------I
          COLUMN       8         7        53        69
           TOTAL    12.1      10.8      77.2     100.0
```

TABLE C-6, concluded

Other

```
                       TUITION AS SHARE OF
                       INSTRUCTIONAL BUDGET
         COUNT   I
         ROW %   IUP TO 20  20 TO 60 OVER 60        ROW
         COL %   I PERCENT   PERCENT  PERCENT       TOTAL
         TOT %   I      1 I        2 I        3 I
        --------I--------I---------I---------I
             1   I      0 I        0 I        8 I        8
FEDERAL AID ONLY I    0.0 I      0.0 I   100.0  I     48.8
                 I    0.0 I      0.0 I    57.4  I
                 I    0.0 I      0.0 I    48.8  I
                -I--------I---------I---------I
             2   I      1 I        0 I        2 I        3
FED AND NON-FED  I   30.6 I      0.0 I    69.4  I     21.9
                 I  100.0 I      0.0 I    17.9  I
                 I    6.7 I      0.0 I    15.2  I
                -I--------I---------I---------I
             3   I      0 I        1 I        3 I        5
NON-FED AID ONLY I    0.0 I     28.5 I    71.5  I     29.3
                 I    0.0 I    100.0 I    24.6  I
                 I    0.0 I      8.3 I    20.9  I
                -I--------I---------I---------I
         COLUMN         1          1         13         15
         TOTAL        6.7        8.3       84.9      100.0
```

TABLE C-7

Packaging of Federal Aid to 1972-73 Aided Entering Full-Time Freshmen by Available Institutional Aid Funds and Institution Type and Control

Public 4-Year

```
                    DISCRETIONARY AID FUNDS
                          AS SHARE OF
                        STUDENT BUDGET

              COUNT   I
              ROW %   IUP TO 5  OVER 5       ROW
              COL %   I PERCENT PERCENT      TOTAL
              TOT %   I     1  I      2  I
              --------I--------I---------I
                   1  I   321  I    567  I    888
   FEDERAL AID ONLY   I  36.1  I   63,9  I   28.8
                      I  28,3  I   29,1  I
                      I  10,4  I   18,4  I
                     -I--------I---------I
                   2  I   301  I    524  I    805
   FED AND NON-FED    I  37,4  I   62,6  I   26.1
                      I  26,5  I   25,9  I
                      I   9,8  I   16,4  I
                     -I--------I---------I
                   3  I   513  I    875  I   1388
   NON-FED AID ONLY   I  37,0  I   63,0  I   45.0
                      I  45,2  I   45,0  I
                      I  16,6  I   28,4  I
                     -I--------I---------I
              COLUMN     1135      1946      3081
              TOTAL      36,8      63,2     100.0
```

TABLE C-7, continued

Public 2-Year

```
                 DISCRETIONARY AID FUNDS
                      AS SHARE OF
                     STUDENT BUDGET

          COUNT  I
          ROW %  IUP TO 5  OVER 5       ROW
          COL %  I PERCENT PERCENT     TOTAL
          TOT %  I      1  I      2  I
         --------I---------I---------I
              1  I    312  I    123  I    435
FEDERAL AID ONLY I   71,7  I   28,3  I   27.1
                 I   26,9  I   27,4  I
                 I   19,4  I    7,7  I
                -I---------I---------I
              2  I    237  I     57  I    294
 FED AND NON-FED I   80,6  I   19,4  I   18.3
                 I   20,4  I   12,7  I
                 I   14,7  I    3,5  I
                -I---------I---------I
              3  I    609  I    269  I    879
NON-FED AID ONLY I   69,3  I   30,7  I   54.7
                 I   52,6  I   59,9  I
                 I   37,9  I   16,8  I
                -I---------I---------I
         COLUMN      1158       450      1607
          TOTAL      72,0      28,0     100.0
```

TABLE C-7, continued

Private 4-Year

```
                     DISCRETIONARY AID FUNDS
                          AS SHARE OF
                         STUDENT BUDGET

               COUNT  I
               ROW %  IUP TO 5  OVER 5     ROW
               COL %  I PERCENT PERCENT    TOTAL
               TOT %  I     1  I     2  I
              --------I--------I--------I
                   1  I    96  I   261  I   357
 FEDERAL AID ONLY     I  26,9  I  73,1  I  18.7
                      I  18,6  I  18,8  I
                      I   5,0  I  13,7  I
                     -I--------I--------I
                   2  I   223  I   698  I   922
 FED AND NON-FED      I  24,2  I  75,8  I  48.2
                      I  42,9  I  50,2  I
                      I  11,7  I  36,6  I
                     -I--------I--------I
                   3  I   200  I   432  I   631
 NON-FED AID ONLY     I  31,6  I  68,4  I  33.1
                      I  38,5  I  31,1  I
                      I  10,5  I  22,6  I
                     -I--------I--------I
              COLUMN      518     1390     1909
               TOTAL     27,2     72,8    100.0
```

TABLE C-7, continued

Private 2-Year

```
                  DISCRETIONARY AID FUNDS
                       AS SHARE OF
                     STUDENT BUDGET

          COUNT   I
          ROW %   IUP TO 5  OVER 5       ROW
          COL %   I PERCENT PERCENT     TOTAL
          TOT %   I     1   I     2   I
          --------I---------I---------I
              1   I    16   I    17   I     33
FEDERAL AID ONLY  I  49,8   I  50,2   I   21,0
                  I  18,6   I  24,1   I
                  I  10,5   I  10,6   I
                 -I---------I---------I
              2   I    28   I    17   I     45
FED AND NON-FED   I  62,9   I  37,1   I   28.5
                  I  32,0   I  24,1   I
                  I  18,0   I  10,6   I
                 -I---------I---------I
              3   I    43   I    35   I     79
NON-FED AID ONLY  I  55,0   I  45,0   I   50.4
                  I  49,4   I  51,0   I
                  I  27,7   I  22,7   I
                 -I---------I---------I
         COLUMN        88        69         156
          TOTAL      56.2      43.8       100.0
```

TABLE C-7, continued

Profit-Making

```
                    DISCRETIONARY AID FUNDS
                         AS SHARE OF
                        STUDENT BUDGET

               COUNT   I
              ROW %    IUP TO 5  OVER 5        ROW
              COL %    I PERCENT PERCENT      TOTAL
              TOT %    I       1 I       2 I
              ---------I---------I---------I
                     1 I      26 I      18 I      44
FEDERAL AID ONLY       I    58,6 I    41,4 I    50.6
                       I    54,9 I    45,5 I
                       I    29,7 I    20,9 I
                      -I---------I---------I
                     2 I       7 I      16 I      23
FED AND NON-FED        I    30,7 I    69,3 I    26.4
                       I    15,0 I    39,9 I
                       I     8,1 I    18,3 I
                      -I---------I---------I
                     3 I      14 I       6 I      20
NON-FED AID ONLY       I    72,8 I    29,2 I    23.0
                       I    30,1 I    14,6 I
                       I    16,3 I     6,7 I
                      -I---------I---------I
              COLUMN          47        40        88
               TOTAL        54,0      46,0     100.0
```

TABLE C-7, continued

Vocational

```
                         DISCRETIONARY AID FUNDS
                              AS SHARE OF
                             STUDENT BUDGET

                   COUNT  I
                  ROW %   IUP TO 5  OVER 5      ROW
                  COL %   I PERCENT PERCENT    TOTAL
                  TOT %   I      1 I      2 I
                  --------I--------I--------I
                       1  I     22 I      3 I      25
      FEDERAL AID ONLY    I   89,4 I   10,6 I    42.6
                          I   39,9 I  100,0 I
                          I   38,1 I    4,5 I
                         -I--------I--------I
                       2  I      6 I      0 I       6
      FED AND NON-FED     I  100,0 I    0,0 I     9.5
                          I   10,0 I    0,0 I
                          I    9,5 I    0,0 I
                         -I--------I--------I
                       3  I     28 I      0 I      28
      NON-FED AID ONLY    I  100,0 I    0,0 I    47.9
                          I   50.1 I    0.0 I
                          I   47,9 I    0,0 I
                         -I--------I--------I
                  COLUMN        56        3        58
                   TOTAL      95,5      4,5     100.0
```

TABLE C-7, concluded

Other

DISCRETIONARY AID FUNDS
AS SHARE OF
STUDENT BUDGET

```
              COUNT   I
              ROW %   IUP TO 5  OVER 5       ROW
              COL %   I PERCENT PERCENT     TOTAL
              TOT %   I     1   I     2   I
              --------I---------I---------I
                  1   I      0  I      4  I       4
FEDERAL AID ONLY      I    0,0  I  100,0  I    35.5
                      I    0,0  I   49,0  I
                      I    0,0  I   35,5  I
                     -I---------I---------I
                  2   I      3  I      0  I       3
FED AND NON-FED       I  100,0  I    0,0  I    27.6
                      I  100,0  I    0,0  I
                      I   27,6  I    0,0  I
                     -I---------I---------I
                  3   I      0  I      5  I       5
NON-FED AID ONLY      I    0,0  I  100,0  I    36.9
                      I    0,0  I   51,0  I
                      I    0,0  I   36,9  I
                     -I---------I---------I
             COLUMN          3         9         12
             TOTAL        27,6      72,4      100.0
```

CHAPTER V

PATTERNS OF FINANCIAL AID OFFERS TO 1972 HIGH SCHOOL GRADUATES

Student financial aid, among other factors, influences both decisions whether to enroll and where to enroll. The significance of differences in net price (costs of attendance minus student aid) on enrollment and choice decisions has been a subject of considerable research and debate. Part of the debate centers on institutional behavior: to what extent are financial aid packages -- their amount and composition -- used to induce students to enroll at individual institutions?

This chapter provides a descriptive view of the financial aid packages offered by two or three alternate institutions to the same prospective postsecondary student. The data extend the analysis of the distribution of actual awards presented in Chapter IV by including aid offers from institutions considered but not attended. The data will also provide a bridge to the multivariate analysis of packaging in Chapter VI. Specifically, we argue here that aid offers at alternate institutions do not differ fundamentally from aid actually received. Hence, an examination of the packaging of aid distributed also provides a good representation of aid offered at alternate choice institutions.

Earlier research on financial aid offers has been quite sketchy._/

_/Other studies have considered the influences on the packaging of actual awards. See Friedman and Thompson (1971); Friedman, et al (1973); College Entrance Examination Board (1971). Spies (1973) reported that aid packages offered by up to three highly selective institutions to applicants tended to be quite similar in amount (as was their practice), but differed in composition (i.e., relatively more or less grant and scholarship aid). No effort was made to search for the source of these differences.

Using information provided by 1972-73 freshman financial aid applicants, Jones (1975) found larger, more favorable aid packages were offered to the better qualified high school graduates (as measured by their ACT scores). In a recent study employing the NLS, G. Jackson (1977) has provided a more comprehensive view of the effects of financial aid offers on enrollment demand and institution choice. Of interest for this report, Jackson identified family income or SES, racial/ethnic group, and high school grades or standardized test scores as key influences on the probability of receiving an aid offer. In addition to these factors, student costs of attendance and the median achievement test score for the freshmen class significantly influenced the amount of financial aid offered.

Of equal interest, Jackson reported that: (1) a majority (55 percent) of entering freshmen applied to only one institution; and (2) of those applying to more than one institution, the key attributes of the alternate choices were quite similar. Taken together, these findings suggest that differences among aid offers to individual students emerge more from differences in institutional attributes, such as budgets, than from attempts by similar institutions to compete for desired students.

The data presented below reinforce these conclusions. Of those accepted to at least one postsecondary institution, nearly two-thirds applied to and were accepted at a single institution. Further, those with multiple aid offers recorded remarkably similar packages

A. Measurement of the Variables

The packaging of financial aid offers is presumed to be influenced by selected student and institution attributes -- family income, student achievement/ability, racial/ethnic group, institution type and control, and institution selectivity. These variables have been defined above.

The financial aid offer data come from items 82 to 84 of the First Follow-Up survey instrument. Importantly, the number of respondents who identified themselves as enrolled in postsecondary education in this section differs substantially from the counts obtained in Section B of the questionnaire and through telephone follow-up interviews. We make no attempt to reconcile these differences here._/

To examine patterns of aid offers, institutional alternatives applied to but not accepting the respondent were excluded. Simply, aid offers would not be forthcoming from institutions which rejected an application for admission. As a result, a number of respondents listing, one, two or three choices were identified as having no, one, or two "potential" aid offers. The analysis sample, therefore, includes only those respondents who have applied to and been accepted at least one postsecondary institution.

Respondents were asked to rank their choices, although the exact meaning

---

_/A comparison of simple descriptive statistics indicates that the aid offer sample includes slightly lower income, lower ability, and more minority respondents than the enrolled sample (employed in Chapters IV, VI, and VIII). Specifically among respondents in the enrolled sample, mean available income (AY_k) came to $4,046, mean SAT score measured 806, and the racial/ethnic distribution broke down to 81.8 percent white, 10.8 percent black, and 3.2 percent hispanic. From the aid offer sample, mean available income amounted to $3,769, mean SAT score measured 763, and whites, blacks and hispanics accounted for 79.4 percent, 12.6 percent, and 3.6 percent of the respondents respectively.

These differences are as one would expect, since the aid offer sample included those who did not enroll. In general, the comparisons suggest that missing data and non-response biases in the aid-offer sample may not be so large as to preclude drawing useful inferences from the available, reported data.

to be attached to these rankings is unclear._/ The alternatives have been re-ordered in the tables below according to the size of the total aid package.

B. Patterns of Financial Aid Offers

Reported aid offers within selected student and institutional groups are presented below.

In Table V-1, aid offers to respondents accepted at one, two, or three postsecondary institutions are shown. Note, particularly, that only 36 percent of all NLS respondents applied to and were accepted at more than one institution (an estimated 334,500 with two institutions, 155,900 with three). Nearly two-thirds of all entering freshmen apparently weighed only one "potential" aid offer. This finding suggests the extent of possible price competition may be limited.

Of those with multiple acceptances, the key difference in the financial aid offer data appeared to be the shares receiving more than one aid offer. Specifically, 7 percent of respondents with two acceptances reported receiving two aid offer packages. About 22 percent of those with two acceptances received only one offer. The differences in multiple aid offers were even more pronounced among the 1972 high school graduates accepted at three institutions. Of these, 4 percent received three offers, 10 percent received two offers, and 33 percent received a single offer of aid.

_/As G. Jackson (1977) points out, a first choice could be the institution attended or be a favored alternative which was not attended due to financial or other reasons. The bias could operate in either direction and inconsistently among respondents. Hence, the meaning of the ranking is unclear.

TABLE V-1

A Comparison of Financial Aid Offers to 1972 High School Graduates Accepted at One or More Postsecondary Institutions

(Dollar amounts based on aid recipients within group)

	One Institution Only [a]	Two Institutions Only [a]		Three Institutions [a]		
		School 1	School 2	School 1	School 2	School 3
Percent Attending	81.85	62.44	31.39	62.70	16.89	15.30
Percent Receiving Offer	20.04	29.30	6.83	47.90	14.49	4.52
OF THOSE RECEIVING OFFERS:						
Total Aid Offered	$1,023	$1,280	$952	$1,489	$1,380	$1,372
Scholarship Aid Offered	454	648	586	903	952	951
Job Aid Offered	145	154	73	128	110	66
Loan Aid Offered	424	481	293	451	324	354
Weighted n (000's)	874.4	334.5	334.5	155.9	155.9	155.9

---

[a] Includes only institutions which have accepted applicant. Schools ranked according to amount of total aid offered.

The differences probably emerges from the institutional options selected. Those with three aid offers were more likely to have been accepted at and considering private and highly selective colleges. The multiple offers were helping to meet the greater costs of attendance (hence, greater need) at these institutions.

When average aid offers to those receiving offers are compared, a remarkable similarity in the amounts and composition of the offers is apparent. Of those with two acceptances, the amounts of each type of aid tended to be greater at school 1. Notably, the somewhat larger aid packages reflected the larger share of private institutions within this group. Similarly, of those with three offers, school 1 packaged a somewhat greater amount of aid (about $1,489) particularly loan aid ($451 compared to about $350 for school 2 and 3 offers). As noted earlier, however, school 1 offering aid tended to be private and highly selective. Hence, differences in student costs can account for the packaging differences which emerged.

Tables V-2 through V-4 permit a comparison of multiple acceptances and multiple offers across family income, racial/ethnic, and student achievement ability groups. Generally, the patterns within the partitioned groups mirrored those just discussed for all respondents.

As one would expect, the data in Table V-2 indicate that the percentages of respondents receiving single and multiple aid offers drops across family income quartiles. A slight decline in total aid offered appears across these groups as well. However, since the higher income respondents were more likely to be weighing offers from higher priced private institutions, their greater expected parental support was partly offset by greater college costs.

TABLE V-2

A Comparison of Financial Aid Offers to 1972 High School Graduates by Family Income

(Dollar amounts based on aid recipients within group;
asterisk denotes fewer than 20 recipients in sample partition)

FAMILY INCOME QUARTILE	AID OFFER GROUPS				
	Two Institutions Only[a]		Three Institutions[a]		
	School 1	School 2	School 1	School 2	School 3
LOW					
Percent Receiving Offer	50.19	14.78	60.00	18.95	6.65
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,490	$1,055	$1,522	$1,409	$1,248*
Scholarship Aid Offered	817	602	852	997	692
Job Aid Offered	181	135	252	148	150
Loan Aid Offered	492	318	418	264	406
LOWER MIDDLE					
Percent Receiving Offer	47.24	12.84	53.59	24.31	5.65
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,314	$ 872	$1,723	$1,394	$1,380*
Scholarship Aid Offered	648	537	1,098	818	655
Job Aid Offered	180	47	79	119	71
Loan Aid Offered	487	280	547	452	672

(continued)

TABLE V-2, concluded

FAMILY INCOME QUARTILE	AID OFFER GROUPS				
	Two Institutions Only[a]		Three Institutions		
	School 1	School 2	School 1	School 2	School 3
	- - -	- - -	- - -	- - -	- - -
UPPER MIDDLE					
Percent Receiving Offer	30.34	6.40	40.50	16.68	4.85
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,150	$1,000	$1,585	$1,283	$1,505*
Scholarship Aid Offered	547	645	956	857	1,196
Job Aid Offered	138	16	148	114	21
Loan Aid Offered	465	344	484	312	289
HIGH					
Percent Receiving Offer	14.19	2.07	21.86	8.64	3.15
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,184	$ 773*	$1,340	$1,424	$1,524*
Scholarship Aid Offered	648	676	819	1,146	1,206
Job Aid Offered	99	48	105	23	0
Loan Aid Offered	437	48	416	255	317

[a] Includes only institutions which have accepted applicant. Schools ranked according to amount of total aid offered.

TABLE V-3

A Comparison of Financial Aid Offers to 1972 High School Graduates by Student Achievement/Ability Score

(Dollar amounts based on aid recipients within group; asterisk denotes fewer than 20 recipients in sample partition)

ACHIEVEMENT/ABILITY GROUPS	AID OFFER GROUPS				
	Two Institutions Only [a]		Three Institutions [a]		
	School 1	School 2	School 1	School 2	School 3
LOW					
Percent Receiving Offer	30.72	6.07	37.38	10.33	2.66
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,240	$ 774	$1,418	$1,278	$ 789*
Scholarship Aid Offered	530	379	720	891	451
Job Aid Offered	186	115	155	48	75
Loan Aid Offered	524	280	543	329	301
LOWER MIDDLE					
Percent Receiving Offer	24.01	4.56	26.79	12.33	4.38
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,391	$ 943*	$1,799	$1,452	$1,552*
Scholarship Aid Offered	662	592	1,176	916	1,461
Job Aid Offered	179	44	202	154	0
Loan Aid Offered	550	307	418	389	91

(continued)

TABLE V-3, concluded

ACHIEVEMENT/ABILITY GROUPS	AID OFFER GROUPS				
	Two Institutions Only [a]		Three Institutions [a]		
	School 1	School 2	School 1	School 2	School 3
	---	---	---	---	---
UPPER MIDDLE					
Percent Receiving Offer	29.14	6.89	32.33	9.80	3.05
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,177	$ 958	$1,206	$1,214	$1,279*
Scholarship Aid Offered	566	508	687	816	721
Job Aid Offered	103	29	108	143	164
Loan Aid Offered	508	421	411	265	393
HIGH					
Percent Receiving Offer	35.94	11.52	41.42	20.65	7.89
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,438	$1,172	$1,601	$1,612	$1,622*
Scholarship Aid Offered	893	877	985	1,196	1,052
Job Aid Offered	139	87	104	77	51
Loan Aid Offered	406	200	512	389	520

[a] Includes only institutions which have accepted applicant. Institutions ranked according to amount of total aid offer.

TABLE V-4

A Comparison of Financial Aid Offers to 1972 High School Graduates by Racial/Ethnic Group

(Dollar amounts based on aid recipients within group;
asterisk denotes fewer than 20 recipients in sample partition)

RACIAL/ETHNIC GROUP	AID OFFER GROUPS Two Institutions Only[a]		Three Institutions[a]		
	School 1	School 2	School 1	School 2	School 3
WHITE					
Percent Receiving Offer	26.75	6.28	33.16	12.87	4.32
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,219	$ 924	$1,360	$1,305	$1,319
Scholarship Aid Offered	602	605	763	886	903
Job Aid Offered	153	64	133	101	46
Loan Aid Offered	464	271	464	311	394
BLACK					
Percent Receiving Offer	44.46	10.22	56.17	26.57	6.56
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,484	$1,018	$2,272	$1,551	$1,585*
Scholarship Aid Offered	659	489	1,686	1,020	1,311
Job Aid Offered	121	117	164	94	107
Loan Aid Offered	704	411	422	436	183

(continued)

TABLE V-4, concluded

RACIAL/ETHNIC GROUP	AID OFFER GROUPS				
	Two Institutions Only [a]		Three Institutions[a]		
	School 1	School 2	School 1	School 2	School 3
	---	---	---	---	---
HISPANIC					
Percent Receiving Offer	55.67	11.09	59.00	38.31	1.35
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,220	$ 784*	$2,120*	$1,864*	$3,158*
Scholarship Aid Offered	914	442	1,529	1,587	1,632
Job Aid Offered	122	45	122	149	0
Loan Aid Offered	185	298	471	128	1,579
OTHER					
Percent Receiving Offer	43.53	6.50	40.05	16.34	7.46
OF THOSE RECEIVING OFFERS					
Total Aid Offered	$1,534	$1,477*	$1,121*	$1,371*	$ 938*
Scholarship Aid Offered	972	708	712	1,077	670
Job Aid Offered	227	308	110	24	40
Loan Aid Offered	335	446	424	263	228

[a] Includes only institutions which have accepted applicant. Schools ranked according to amount of total aid offer.

Within groups, few striking differences emerged in the packaging of aid offers. Of those with two acceptances, larger amounts of aid were offered by school 1; this group included more private institutions than did the school 2 group of institutions offering aid. Aid offers from school 1 and school 2 groups for those with three acceptances tended to be similar, as well. The somewhat greater total aid packages offered by school 1 institutions in the middle income quartiles (measuring $1,723 and $1,585) tracks well with the relatively larger share of private, hence higher priced, institutions in these groups.

Generally, more talented high school graduates were more likely to receive single and multiple aid offers. From Table V-3, 34 and 37 percent of low ability freshmen with two and three college acceptances, respectively, were offered financial aid. For higher ability freshmen, the shares receiving at least one aid offer were 36 percent and 41 percent.

Further, total aid offered tended to increase across student ability groups, with the largest offers averaging $1,240 and $1,418 for recipients of offers in the low ability group up to $1,438 and $1,601 for respondents with offers in the high ability group. These findings mirror those reported for aid recipients in Chapter IV.

Within groups, differences in aid offers between school alternatives 1 and 2 seem to have reflected differences in costs of attendance.. Of respondents with two acceptances, those reporting offers from school 2 generally weighed aid packages from a group of institutions which contained relatively fewer private, higher priced colleges. The composition of the population of institutions offering aid to those with three acceptances differed only in the lower middle ability group. Here, as might be inferred, school 1 offers came from a group with relatively more private institutions.

The data in Table V-4 indicate that black students with multiple acceptances were more likely to receive aid offers. About 30 percent of whites and nearly 50 percent of blacks received an offer from at least one institution. Moreover, black freshmen received larger aid offers than did whites, in spite of the fact that blacks tended to apply to, and be accepted at, fewer higher priced institutions. Since minority families were more likely to be low income as well, the racial/ethnic partition probably reflected underlying differences in financial aid capacity to pay for educational expenses.

Again, among those with two acceptances differences in the cost of attendance probably accounted for a large share of the difference in aid packages. The greater aid offers, including larger loan amounts, in the school 1 group came from a relatively larger number of private institutions.

Since more selective institutions tended to be higher cost, public and private four-year colleges, a larger share of multiple acceptance students considering these institutions should have received offers. In fact, except for the non-selective group of institutions, this observation appeared to be true among freshmen in 1972-73. From Table V-5, about 30 percent of those with more than one acceptance received an aid offer from a less selective institution. An estimated 35 to 40 percent of those accepted at highly selective institutions received an aid offer.

With the exception of non-selective institutions, aid offers from school 1 institutions were greater than offers from school 2 institutions (comprised of greater amounts of grant and scholarship aid or loan aid, or both)

TABLE V-5

A Comparison of Financial Aid Offers to 1972 High School Graduates by Median Achievement/Ability Score at Postsecondary Institution

(Dollar amounts based on aid recipients within group;
asterisk denotes fewer than 20 recipients in sample partition)

MEDIAN ACHIEVEMENT/ ABILITY GRUOP	AID OFFER GROUPS				
	Two Institutions Only [a]		Three Institutions [a]		
	School 1	School 2	School 1	School 2	School 3
LOW					
Percent Receiving Offer	31.44	10.67	43.51	13.31	2.51
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,495	$ 918*	$1,377	$1,585*	$1,833*
Scholarship Aid Offered	388	422	471	1,022	956
Job Aid Offered	289	140	165	135	319
Loan Aid Offered	817	356	738	428	558
LOWER MIDDLE					
Percent Receiving Offer	28.18	5.84	31.16	10.48	4.01
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,136	$ 668	$1,881	$1,135	$1,272*
Scholarship Aid Offered	529	291	1,104	744	923
Job Aid Offered	163	103	164	191	100
Loan Aid Offered	444	274	292	200	224

(continued)

TABLE V-5 , concluded

MEDIAN ACHIEVEMENT/ ABILITY GROUP	AID OFFER GROUPS				
	Two Institutions Only [a]		Three Institutions [a]		
	School 1	School 2	School 1	School 2	School 3
UPPER MIDDLE					
Percent Receiving Offer	27.45	6.61	34.16	12.84	3.94
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,209	$ 892	$1,268	$1,044	$1,091*
Scholarship Aid Offered	583	635	624	646	761
Job Aid Offered	146	45	129	117	25
Loan Aid Offered	477	197	515	272	304
HIGH					
Percent Receiving Offer	34.65	7.55	39.49	20.41	6.68
OF THOSE RECEIVING OFFERS:					
Total Aid Offered	$1,527	$1,550	$2,198	$1,828	$1,722*
Scholarship Aid Offered	975	1,007	1,671	1,357	1,168
Job Aid Offered	118	79	109	59	45
Loan Aid Offered	433	450	418	407	494

[a] Includes only institutions which have accepted applicant. Schools ranked according to amount of total aid offered.

for every selectivity partition. As before, a relatively larger number of higher priced, private institutions in the school 1 group probably accounted for these differences.

CHAPTER VI

DETERMINANTS OF FINANCIAL AID PACKAGES: SOME INFERENCES ABOUT INSTITUTIONAL BEHAVIOR

The hypotheses developed in Chapter III have been submitted to empirical testing, and the results are presented below. We display the general form of student aid distribution function and address several methodological issues in Section A. In Section B, the determinants of all student aid taken together are estimated. Section C contains estimates of the student aid distribution function applied to different types of aid -- grants and scholarships, term-time work, and student loans. The distribution of financial aid from specific programs, including all Federal aid, provides the focus of Section D.

A. Methodology: Some Preliminary Considerations

The general student aid distribution function developed in Chapter III is given by:

$$(1)\ A_{i,k} = f(Y_k, Y_s, SAT_k, SAT_s, COST_k, R_k, X_k, B_{s,j}, \varepsilon)$$

where

$A_{i,k}$ = the i^{th} type of financial aid received by the k^{th} type of student

Y_k = family income, excluding student earnings

Y_s = median family income at postsecondary institution attended

SAT_k = student's academic achievement level, as measured by the SAT score

SAT_s = median SAT score of the freshman class at the institution attended

$COST_k$ = student costs of attendance

R_k = student racial/ethnic group (1 = white)

X_k = student sex (1 = male)

$B_{s,j}$ = institution student aid funds per FTE for the j^{th} program at the postsecondary institution attended

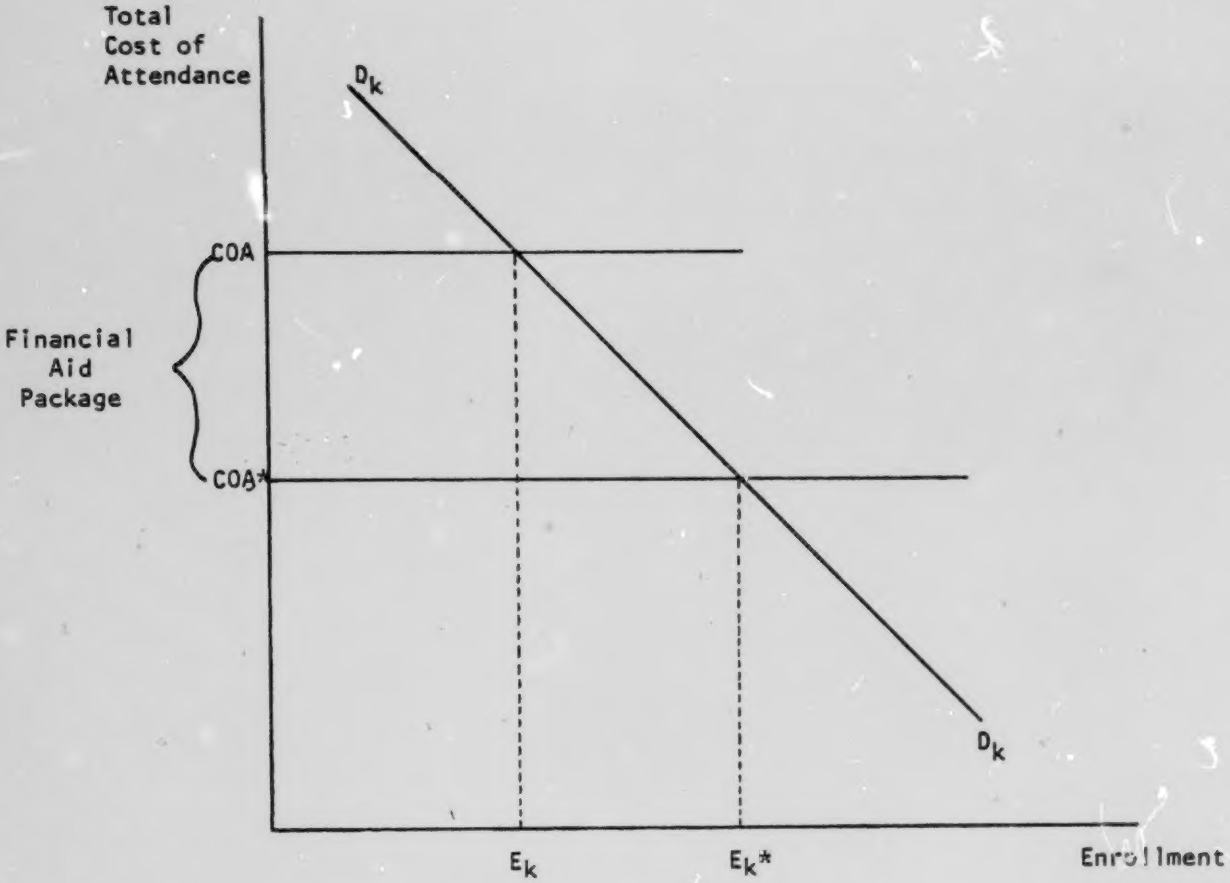
ε = all other factors and random disturbance

An appendix to this report describes the construction of and data sources for each variable.

Since the data refer to enrolled students, the student aid distribution function incorporates both student demand and institution pricing (supply) influences. In economic jargon, equation (1) is a "reduced form" equation. It describes packages offered and received.

The combined influences of demand and supply are illustrated in Figure VI-1. Here, D_kD_k represents the private enrollment demand curve for the k^{th} type of student (e.g., low income, minority, high ability) faced by the institution. With gross costs of attendance, COA, E_k of student type k will enroll. A student aid offer of (COA-COA*) reduces the cost-price to potential students and generates an increase in enrollment of student type k to E_k^*. Not all potential students of type k will

Figure VI-1



The Financial Aid Link Between
Student Costs and Enrollment Demand

enroll with a reduction in cost-price to COA*. The extent of the enrollment response will depend upon the price elasticity of demand._/

1. The Assumptions

Under reasonable assumptions, the reduced form provides a satisfactory representation of the influences on institutional packaging of aid. First, we assume institutions are award of the price elasticities (alternatively, show-up rates) of different groups of students. Knowing the probable enrollment responses, institutions package financial aid so as to attract the most desirable types of students. As noted above, low income (or minority) students are estimated to be more responsive to price changes. Therefore, evidence of equal or marginally greater price reductions to low income or minority full-time freshmen would be consistent with the hypothesis that institutions are attempting to attract these students.

Second, we assume that aid offers to identified types of potential students are similar. That is, potential enrollees with equal financial

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_/ The enrollment demand studies published to date reveal differences in price elasticity among groups. Generally, students from low income families exhibit a greater response to price changes than do higher income students. (See Kohn, Manski, and Mundel [1974]; Radner and Miller [1975]; Carlson [1974]; Barnes, Erickson, Hill, and Winokur [1972]; and Carlson [1975]). Thus, equal increases in enrollments from low and high income groups could be achieved with smaller price reductions to the former group. Since minority students are disproportionately low income as well, the same conclusion would apply to price response differences among racial/ethnic groups.

Similarly, Radner and Miller have estimated that lower ability students are more responsive to changes in price than higher ability students. Hence, offering greater price reductions to high ability students would apparently only compensate for their estimated lower price response. It should be pointed out that the Radner and Miller price response estimates are based upon gross prices: student aid data were not available in the SCOPE file. Since more able students are more likely to apply for and to receive student aid, re-estimates of the price elasticities using net prices might well reverse the findings (see Bishop [1972] and Wagner [1977]).

resources, abilities, and other observed attributes are viewed as identical from the institution's point of view, and they receive essentially identical aid offers. Other, assumed to be random, influences are assumed to account for differences in the decisions of these identical potential students with equal aid offers to enroll._/

Third, we assume that institutions are aware of the type and amount of financial aid received by the student through non-institutional channels. Under this assumption, the postsecondary institution makes incremental adjustments in the financial aid package offered to certain types of potential students. Since "private" sources have accounted for less than one percent of all available student aid in recent years, this assumption does not seem to be unreasonable (Sidar [1976]; National Task Force on Student Aid Problems [1975]).

2. Estimation Techniques

Three problems must be considered when the reduced form equation (1) is submitted to empirical testing.

First, several of the explanatory variables are multicollinear (i.e., statistically associated with each other). This poses an estimation problem, since the effect is to increase the standard errors of the

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_/Using this explanation, the decrease in enrollment rates for college-age dependents from high to low income quartiles results from two factors. First, other family attributes which influence the enrollment decision might limit the low income enrollment quite apart from financial capacity to pay (see McMahon and Wagner [1972]; McMahon [1974]; Wagner [1977]; Becker [1975]). Second, inadequate amounts of financial aid available to similar potential students within the low income quartile could further limit the enrollment rate for this group.

estimated coefficients. Therefore, our confidence in the reliability of the estimated coefficient is reduced._/

A number of techniques can be employed to reduce multicollinearity. Partitioning the NLS sample across institution type and control categories enabled us to reduce the magnitude of the problem. Remaining instances where multicollinearity may affect the estimates, however, are noted.

Second, the proportion of the differences in student aid "explained" by the equations (the estimated "fit" as measured by the adjusted R^2) seldom exceeds 20 percent. Lower R^2 for cross-section regressions are generally to be expected. Reporting and measurement errors for specific items are more likely to introduce variation that is not systematically related to the explanatory variables. Further, for a number of the financial aid variables, more than three-fourths of all entering full-time freshmen reported no support. By itself, the large share of zero amounts presents no estimation problems. However, since zero represents an "extreme" value, the estimated "fit" will be lower for types of financial aid received by few students._/ Finally, in some instances the poor

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_/It should be pointed out that the multicollinearity, per se, does not invalidate our conception of the influences on student aid packaging. The problem is in the estimation, not in the theory. If our goal is to predict the types and amounts of aid received by students, then multicollinearity is of less concern (so long as the associations are expected to continue in future years). However, if we wish to identify the independent effects of each explanatory variable on the types and amounts of financial aid received, the estimated coefficients will be less reliable where the explanatory variables are correlated.

_/Both the measurement and zero problems have been addressed in cross-section studies of consumer expenditures. One method adopted to reduce these problems and to improve the "fit" employs mean values for variables within a smaller number of identified groups. The groups become the observations in weighted regressions. See Prais and Houthakker (1955) and Michael (1972).

The zero problem could be reduced by estimating the amount of aid offered conditional on aid having been offered (see Kohn, Manski, and Mundel [1974]). Initial attempts to implement this method did improve the "fit" somewhat; none of the results, however, were altered. In the end, we opted for the more direct "all students" approach leaving the more detailed specifications for future research.

"fit" accurately reflects the weak association between student/family and institution attributes and the distribution of certain types of aid (e.g., transfer income benefits).

Specification of the appropriate functional form for the student aid distribution function is a final concern. In modeling institution admission and financial aid practices, Miller [1975] has employed an instrumental multivariate probit specification. Simplifying, Miller estimates the likelihood that a student will be admitted based on certain student attributes and on a prior determination of influences on the composition and amount of the financial aid package. Our analysis is confined to the latter step in which Miller has adopted ordinary least squares regression techniques. Lacking specific guidance from the theory sketched in Chapter III, the linear specification will be used in the testing below.

Alternative measures of the income, academic aptitude, costs of attendance, and student aid budget variables were substituted into the general function, and the equations were re-estimated. At various points, several of these results are noted below. For the most part, however, the strength and direction of the determinants of financial aid packaging were not greatly affected. Therefore, the estimates and discussion utilize easily understood measures which directly gauge the extent to which Federal objectives are being met.

B. The Packaging of All Financial Aid

The results of the basic ordinary least squares (OLS) regressions for aggregate measures of student aid are presented below.

1. Receipt of Aid

Table VI-1 contains estimates of the effects of student/family and institutional variables on the probability of receiving aid._/

Income. If institutions are attempting to meet equal education opportunity goals, low income students should be more likely to receive aid. Supporting this hypothesis, the income measure in equation (1.1) exhibits a significant, negative effect. Students with family income $1,000 less than the mean were nearly 5 percentage points more likely to receive some type of aid. Put another way, for every 10 percent increase in family income, the likelihood of receiving financial aid is estimated to decline by almost 12 percent (or 6.6 percentage points)._/

To search for differences in packaging among institutions, a second available income term is introduced which takes on the value of zero when the median family income at the postsecondary institution measures less than $10,500. As shown in equation (1.2), both income terms are significant and negative. The estimates suggest that institutions which draw their students from higher income families tended to discriminate more severely according to income in the award of aid. Whereas the probability of receiving aid fell off an estimated 4.6 percentage

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_/The OLS estimates in the receipt equations are not "best," i.e, not least variance. The loss of efficiency is attributable to the dichotomous dependent variable. The estimators are, however, linear and unbiased, and have been shown to be generally adequate. See Goldberger (1964).

_/The calculated "elasticities" are implied by the regression coefficients in the estimated equations. Note, however, that the family income measure used here, and below, is different than the available income measure employed in the regressions. The estimates are calculated at the mean values of the relevant variables:

$$\Delta P(\Sigma A_{i,k}>0) = -.0049 \times (.10\times\overline{Y}_k)$$

$$\text{where} \quad \overline{Y}_k = \$13,573, \text{ and}$$

$$\overline{P} = 55.73\%$$

See Appendix A.

Table VI-1

Determinants of Total Aid Packaged to 1972-73 Entering Full-Time Freshmen

(Underlined coefficients significant at .05 level; standard errors in parentheses)

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_l	
(1.1) Receipt	-.0049 (.0001)		.0194 (.0017)			-6.751 (1.499)	-2.107 (.9383)	.0051 (.0004)	.0077 (.0015)	53.65
R^2 = .18 F = 334.03										
(1.2) Receipt	-.0046 (.0001)	-.0021 (.0002)	.0190 (.0018)	.0059 (.0015)	-.0034 (.0027)	-6.919 (1.514)	-2.267 (.9365)	.0054 (.0004)	.0076 (.0016)	53.32
R^2 = .18 F = 229.64										

points for every $1,000 in family income at low and moderate income institutions, this same income increment produced an estimated 5.8 point drop (sum of the two coefficients) in the likelihood that aid was received at upper middle income institutions._/

SAT Score. If institutions are attempting to enhance institutional prestige, students with higher academic aptitudes would be more likely to receive aid, other things equal._/ Evidence from the estimates in Table VI-1 supports this hypothesis: the student's SAT score was positively associated with the receipt of aid. In particular, students scoring 100 points above the average on the SAT were an estimated 2 percent more likely to receive aid. In other words, a 10 percent improvement in the SAT score would have increased the likelihood of receiving aid by 3 percent (1.6 percentage points).

Among institutions, the more selective -- those with the highest median SAT score for the freshman class -- appeared to discriminate more severely according to student achievement/ability scores. An entering full-time freshman presenting an SAT score 100 points above the mean at highly selective institutions improved his/her chances of receiving aid by almost 2.5 percentage points. A similar student enrolling at a less selective institution was an estimated 1.9 percentage points more likely to receive aid.

_/Specifically, when $Y_s < \$10,500$,

$$\Delta P(\Sigma A_{i,k}>0) = -.0049\times(\Delta Y_k) - .0012\times(0)\times(\Delta Y_k)$$

When $Y_s \geq \$10,500$,

$$\Delta P(\Sigma A_{i,k}>0) = -.0049\times(\Delta Y_k) - .0012\times(1)\times(\Delta Y_k)$$

_/But, see footnote on page VI-4.

Racial/Ethnic Group. According to the estimates in Table VI-1, entering full-time minority freshmen were about 7 percent more likely to receive aid than their majority peers. This finding is consistent with the hypothesis that institutions were attempting to meet equal educational opportunity objectives.

Student Sex. Evidence from the NLS sample, shown in Table VI-1, suggests that females were about 2 percentage points more likely to receive some financial aid than male students. In part, this finding could result from the lower anticipated summer earnings by women students. Other things equal, women exhibit a higher need because need analysis calculations developed by CSS (and used by many institutions) expect about $100 less from the summer savings of female dependent students.

Student Budget. As expected, students attending higher cost institutions (i.e., who demonstrate greater calculated need, *ceteris paribus*) were more likely to receive aid. According to the parameter estimates in Table VI-1, students incuring additional costs of $1,000 above the mean (an approximate measure of the 1972-73 public/private tuition gap) improved their likelihood of receiving aid by 5.1 to 5.4 percentage points. A ten percent difference in student costs was associated with an estimated 2 percent difference in the probability of receiving aid (1.1 percentage points).

Institutional Aid Funds. Additional institutional student aid funds per FTE were also linked to the probability of receiving aid, although the marginal effect was apparently not very great. Specifically, a ten percent increase in institutional aid funds per student increased the likelihood of receiving aid by two-tenths of a percent (.13 percentage points). Hence, although matching requirements in Federal student aid programs work in favor of institutions with available funds, the amount of 1972-73 Federal campus-based aid and the necessary matching funds were not so great as to impact heavily on the likelihood of receiving aid across all institutions.

2. Aggregate Amount of Aid

Equation (1) was estimated with the aggregate level of aid, $\Sigma A_{i,k}$, as the regressand. The results, which mirror those just discussed, are shown in Table VI-2.

Income. As before, the income measure exhibits the expected negative influence on total aid. The estimated effect is quite significant: a ten percent difference in family income alters the level of aggregate aid received by 18 percent. An enrolled student from a family with $1,000 less income than the average would have received an estimated $85.50 in additional aid funds.

Institutions enrolling higher income students tended to discriminate more sharply according to income in the distribution of dollars. The estimated elasticities for total aid with respect to income were -2.2 and -1.5 for high income and low to middle income institutions, respectively.—/

SAT Score. From equation (2.1), students demonstrating greater academic aptitude tended to receive larger total aid packages. Students

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/The elasticities are calculated at the mean values of the relevant variables. For institutions where $Y_s \geq \$10,500$,

$$\Delta \Sigma A_{i,k} = -.0752 \times (.01 \times \$16,430) - .0324 \times (.01 \times \$16,430)$$

For institutions where $Y_s < \$10,500$,

$$\Delta \Sigma A_{i,k} = -.0752 \times (.01 \times \$11,573)$$

See Appendix A.

Table VI-2

Determinants of Total Aid Packaged to 1972-73 Entering Full-Time Freshmen

(Underlined coefficients are significant at .05 level; standard errors are in parentheses)

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con-stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_l	
(2.1) Total Aid	-.0855 (.0021)		.2788 (.0292)			-216.1 (25.08)	-52.16 (15.69)	.2774 (.0070)	.2712 (.0256)	293.0
R^2 = .30 F = 664.07										
(2.2) Total Aid	-.0752 (.0023)	-.0324 (.0031)	.2606 (.0301)	.1752 (.0247)	.0727 (.0445)	-208.3 (25.22)	-55.12 (15.59)	.2841 (.0073)	.2650 (.0258)	270.6
R^2 = .31 F = 464.31										

with SAT scores 100 points above the mean score received an estimated \$28 more in total aid. Again, selective institutions apparently discriminated more severely according to measured SAT score. Less selective institutions increased total aid by 3 percent for a 10 percent improvement in SAT scores. Among selective institutions -- those enrolling a Freshman class with a median SAT score greater than 1100 -- the total amount of aid increased by an estimated 4 percent._/

Other Variables. The results for the remaining variables in equations (2.1) and (2.2) are similar to those discussed in part I. The student's racial/ethnic group and costs of attendance are estimated to have sizeable effects on the amount of aid received. Minorities received, on average, over \$200 more than their white peers, other things equal. Students incuring costs \$1,000 greater than the average were estimated to receive an additional \$284 in aid. Expressed differently, relatively greater costs were associated with equal percentage increases in the level of the aid package.

On the other hand, student sex and the level of institutional aid funds apparently exerted a marginal influence on the amount of aid offered and received. In particular, women students received barely \$50 more in aid than male students. Similarly, a 10 percent increase in institutional

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_/The calculations are as follows:

Where $SAT_s > 1100$

$$\Delta (\Sigma A_{i,k}) = .2606 \times (.10 \times 976) + .1752 \times (.10 \times 976)$$

Where $SAT_s \leq 1100$

$$\Delta (\Sigma A_{i,k}) = .2606 \times (.10 \times 674)$$

Mean total aid measured \$1,005 at highly selective institutions and \$548 at non-selective institutions. See Appendix A.

funds per FTE (estimated at about $150,000 per institution) would have increased the total aid package by less than one percent -- about $5.

3. Packaging of Total Aid Within Institution Sectors

In an attempt to probe for influences on the aggregate amount of aid offered and received, the general equations are re-estimated separately for NLS entering full-time freshmen enrolled at public four-year, public two-year, and private four-year institutions. In part, this partitioning permits comparisons of aid packaging among broadly-defined institutional sectors which are frequently contrasted along other lines. But, beyond offering comparisons of general interest, the partitioning also differentiates among students according to several of the influences examined above. Private four-year institutions, for example, tended to enroll higher income and more able students and also to charge more for tuition. Public two-year institutions tended to enroll relatively lower income students, to charge lower tuitions, and to administer fewer dollars of institutional aid funds per FTE.[/] Hence, the partitioning "controls," in part, for the interaction among the explanatory variables.

Tables VI-3 and VI-4 contain the OLS estimates within institutional sectors for the receipt of aid and the aggregate amount of aid respectively. With the exception of the public two-year estimates, the aid

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[/] Alternate measures and specifications of several variables in the general equation yield estimates which suggest some partitioning is necessary.

For example, when the student budget variable was replaced by its squared value (a specification which permits both the level of and marginal difference in costs to influence total aid), the estimated effect of student's SAT score is doubled (see equation [B. 4] in Appendix B).

When the student budget variable is replaced by a tuition and fees measure, only the parameter estimate applied to the high SAT institutions, (D_{sh}) (SAT_k), was greatly affected -- in most cases becoming insignificant. Similar substitutions of different types of Federal campus-based aid funds administered by the institution (EOG-initial year, CWS, and NDSL) for institutional aid funds affected the high SAT institution parameter estimate as well, generally increasing their sizes. These tests are shown in Appendix B.

Table VI-3

Determinants of Total Aid Packaged to 1972-73 Entering Full-Time Freshmen by Institutional Sector

(Underlined coefficients significant at .05 level; standard errors are in parentheses)

	DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
		Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
		AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_I	
(3.1)	Receipt R^2 = .18 F = 334.03	-.0046 (.0001)	-.0012 (.0002)	.0190 (.0018)	.0059 (.0015)	-.0034 (.0027)	-6.919 (1.514)	-2.267 (.9365)	.0054 (.0004)	.0076 (.0016)	53.32
(3.2)	Receipt, Public 4-Year R^2 = .19 F = 107.55	-.0050 (.0002)	-.0008 (.0003)	.0162 (.0029)	.0107 (.0022)	.0040 (.0037)	-5.888 (2.283)	-3.895 (1.411)	.0036 (.0009)	.0028 (.0022)	60.57
(3.3)	Receipt, Public 2-Year R^2 = .13 F = 42.58	-.0037 (.0003)	-.0002 (.0007)	.0184 (.0037)		-.0134 (.0082)	-6.316 (3.110)	-1.750 (2.001)	.0104 (.0014)	.0064 (.0049)	41.50
(3.4)	Receipt, Private 4-Year R^2 = 22 F = 70.79	-.0047 (.0003)	-.0015 (.0033)	.0172 (.0042)	.0030 (.0022)	-.0075 (.0072)	-5.710 (3.158)	.9791 (1.830)	.0042 (.0008)	.0077 (.0026)	62.93

Table VI-4

Determinants of Total Aid Packaged to 1972-73 Entering Full-Time Freshmen by Institutional Sector

(Underlined coefficients significant at .05 level; standard errors are in parentheses)

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{s1})(SAT_k)$	R_k	X_k	$COST_k$	B_1	
(4.1) Total Aid, All Students R^2 = .31 F = 464.31	-.0752 (.0023)	-.0324 (.0031)	.2606 (.0301)	.1752 (.0247)	.0727 (.0445)	-208.3 (25.22)	-55.12 (15.59	.2841 (.0073)	.2650 (.0258)	270.6
(4.2) Total Aid, Public 4-Year R^2 = .26 F = 163.26	-.0716 (.0028)	-.0084 (.0034)	.1084 (.0391)	.1276 (.0291)	.2287 (.0491)	-168.5 (30.42)	-42.09 (18.80)	.2199 (.0129)	.1897 (.0291)	401.1
(4.3) Total Aid, Public 2-Year R^2 = .21 F = 75.40	-.0394 (.0029)	-.0174 (.0080)	.0144 (.0406)		-.0194 (.0902)	49.81 (34.04)	-43.49 (21.90)	.2752 (.0150)	-.0756 (.0539)	127.2
(4.4) Total Aid, Private 4-Year R^2 = .33 F = 122.53	-.1420 (.0073)	-.0347 (.0078)	.5088 (.1001)	.1468 (.0530)	-.7178 (.1707)	-494.9 (75.10)	47.94 (43.51)	.2301 (.0196)	.2150 (.0631)	1014

distribution functions by sector explain about as much of the variation in total aid (as measured by adjusted R^2) as the "all students" equations (3.1) and (4.1)

Income. Among sectors, family income least affected the probability of receiving aid at public two-year institutions. From equation (3.3), a $1,000 increment in income reduced the likelihood of receiving aid by an estimated 3.7 percentage points at these schools. Among four-year institutions, a similar income change was associated with a five to six point decline. Freshmen enrolled at higher income public four-year institutions exhibited a drop in probability at the upper end of this range -- an estimated 5.8 percentage points. Those enrolled at low-to-middle income institutions were 5.0 points less likely to receive aid for every $1,000 increment in income. However, as shown in equation (3.4), the $1,000 increment in family income reduced the chances of receiving aid at private four-year institutions by 4.7 percentage points, regardless of the median family income at the institution attended. The higher costs of attendance at private institutions could account for this result, since costs probably dominate any differences in family income levels among institutions in establishing the eligibility for aid.

Looking at Table VI-4, family income again least affected the amount of total aid received by public two-year college freshmen. The $1,000 increment in income resulted in an estimated $39 to $57 drop in total support for these students. This is about half as great as the estimated decline for public four-year students ($72 to $80) and about one-third the estimated effect on the amount of aid for private four year students ($142 to $177).

Institutions enrolling higher income students, regardless of sector, tended to discriminate more sharply according to income. For example, among higher income private four-year institutions, a $1,000 income difference produced an estimated $176 change in the total aid package. At low-to-middle income private four-year schools, the aid amount differed by an estimated $142. Among public four-year institutions, the difference in the estimated income effects on the level of aid between high and low-to-middle income institutions measured about $8 -- the lowest absolute and relative difference across all sectors.

SAT Score. No large differences in the effect of measured academic aptitude on the probability of receiving aid emerge from the equations in Table VI-3. A 100 point improvement in SAT scores apparently increased the chances of receiving aid by 1.6 to 2.7 percentage points.

Within institutional sectors, highly selective institutions tended to differentiate among students by SAT score as did their less selective counterparts. The public four-year sector provided the only exception. Specifically, while freshmen at less selective public four-year institutions improved their chances of receiving aid by 1.6 points for every 100 point increase in SAT scores, those at highly selective public four-year institutions were 2.7 percentage points more likely to receive aid with the same SAT score change. For those freshmen at private four-year and public two-year institutions presenting SAT scores 100 points above the mean, the probability of receiving aid increased by an estimated 1.7 to 1.8 percentage points, regardless of the selectivity of the institution.

Differences in student SAT scores produced the greatest changes in the level of aggregate aid offered and received at private four-year institutions. An entering full-time freshman presenting an SAT score 100 points above the mean received $65 more in total aid.

Several interesting results emerge from the comparisons across selectivity groups within each sector. First, the more selective private four-year institutions discriminated more sharply by student SAT score in the amount of aid awarded. Entering full-time freshmen with SAT scores 100 points above the mean received an additional $65 in total aid. Further, non-selective private four-year colleges apparently reduced the level of aid by $21 for every 100 point improvement in the SAT score. Finally, while aid amounts at both highly selective and non-selective public four-year institutions appeared to reflect differences in SAT scores, the non-selective schools provided the largest increment in aid. Specifically, aid was increased by an estimated $34 at non-selective (compared to $24 at highly selective) public four-year institutions. This result suggests that the less selective public four-year institutions may well be using price inducements to compete with the more selective counterparts for talented high school graduates.

Racial/Ethnic Group. Across all institution sectors, minorities appeared to be favored in the likelihood of receiving aid and in the amount of support offered and received. From Table VI-3, the estimates among institutional sectors do not vary greatly: minorities were about 6 to 7 percentage points more likely to receive aid than their majority peers.

More pronounced differences in the distribution of total aid by sector emerge from Table VI-4. For all freshmen, total aid to minority students amounted to an estimated $208 more than total aid to white students. Notably, the minority freshman at a private four-year college recorded an estimated $495 more in aid than his/her white classmate. On the other hand, the difference in total aid by racial/ethnic group among public two-year college students was insignificant. This latter finding might be attributed to the relatively low income of all freshmen attending public two-year colleges. Many, regardless of racial/ethnic group, simply would not have enrolled without some financial assistance.

Student Budget. The estimated coefficients in Tables VI-3 and VI-4 reveal comparable marginal effects of costs of attendance on the distribution of total aid. A ten percent difference in student costs resulted in a .7 to 1.5 percentage point difference in the probability of receiving aid, depending on the type of institution attended.[/]

Equations (4.1) to (4.4) illustrate the estimated effects of marginal changes in student costs on the amount of aid offered and received. A ten percent difference in costs changed the amount of total aid by an estimated 8 percent at public four-year, 12 percent at public two-year, and 7 percent at private four-year institutions.

[/] See Appendix A for the calculations. Student budgets averaged $2,017, $1,390, and $3,538 at public four-year, public two-year, and private four-year institutions.

Institutional Aid Funds. Consistent with the findings for all students, the level of institutional aid funds per FTE exhibited a marginal, and sometimes insignificant, influence on the distribution of total aid within institutional sectors.

With the larger student budgets, private four-year colleges might be expected to rely more heavily on institutional resources to package aid. In fact, the evidence from equations (3.4) and (4.4) suggests a much smaller importance for the presumed influence. The probability of receiving aid was increased by only four-tenths of one percent (.23 percentage points) for each ten percent increase in institutional aid funds per FTE. Similarly, the same difference in institutional aid funds yielded an estimated $6 (.6 precent) increase in the mean total aid offered and received among private four-year college students.

C. Packaging of Different Types of Aid

Although the award of student aid is a major determinant in the decision to enroll, the composition of the financial aid package also influences the enrollment (and choice) decisions of many students. The determinants of the level of different types of aid -- grants and scholarships, term-time work, and student loans -- are considered below.

1. Amounts of Aid: All Students

Tables VI-5 to VI-7 present the results of the basic OLS equations for packaged amounts of grant and scholarship aid, term-time work, and student loans. The grant and scholarship equations exhibit the best "fit" (adjusted R^2 = .23, compared to .04 for the term-time work estimates and .12 for the student loan equations). Of the three types of aid,

Table VI-5

Determinants of Grant and Scholarship Aid Packaged to 1972-73 Entering Full-Time Freshmen

(Underlined coefficients are significant at .05 level; standard errors are in parentheses)

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con-stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_l	
(5.1) Grant and Scholarship Aid $R^2 = .23$ $F = 460.52$	$\underline{-.0454}$ (.0015)		$\underline{.3065}$ (.0206)			$\underline{-216.2}$ (17.73)	6.167 (11.09)	$\underline{.1546}$ (.0049)	$\underline{.1399}$ (.0181)	34.68
(5.2) Grant and Scholarship Aid $R^2 = .24$ $F = 327.14$	$\underline{-.0407}$ (.0016)	$\underline{-.0166}$ (.0022)	$\underline{.2713}$ (.0213)	$\underline{.1725}$ (.0175)	$\underline{-.0810}$ (.0314)	$\underline{-212.1}$ (17.82)	2.045 (11.02)	$\underline{.1506}$ (.0052)	$\underline{.1238}$ (.0182)	60.80

Table VI-6

Determinants of Term-Time Work Aid Packaged to 1972-73 Entering Full-Time Freshmen

(Underlined coefficients are significant at .05 level; standard errors are in parentheses)

	DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
		Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
		AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_1	
(6.1)	Term-Time Work Aid R^2 = .04 F = 67.69	-.0108 (.0007)		-.0522 (.0099)			-24.13 (8.570)	-5.941 (5.363)	.0158 (.0024)	.0447 (.0088)	168.2
(6.2)	Term-Time Work Aid R^2 = .04 F = 48.59	-.0091 (.0008)	-.0045 (.0011)	-.0404 (.0104)	-.0185 (.0085)	.0141 (.0153)	-26.88 (8.667)	-5.557 (5.360)	.0201 (.0025)	.0509 (.0088)	152.1

Table VI-7

Determinants of Student Loan Aid Packaged to 1972-73 Entering Full-Time Freshmen

(Underlined coefficients are significant at .05 level; standard errors are in parentheses)

	DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
		Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
		AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{s1})(SAT_k)$	R_k	X_k	$COST_k$	B_1	
(7.1)	Student Loan Aid R^2 = .12 F = 206.89	-.0255 (.0012)		.0423 (.0169)			.1847 (14.62)	-48.73 (9.149)	.1019 (.0041)	.0964 (.0149)	49.11
(7.2)	Student Loan Aid R^2 = .12 F = 143.60	-.0226 (.0013)	-.0086 (.0018)	.0411 (.0177)	.0309 (.0145)	.1226 (.0261)	7.666 (14.77)	-48.23 (9.135)	.1057 (.0043)	.0967 (.0151)	26.90

grants and scholarships are most likely to fall under institution control. Therefore, the amounts of this aid offered and received would be best explained by the specified student/family and institution variables. On the other hand, many term-time jobs were obtained from non-institutional sources and without regard to student characteristics. Similarly, access to student loans varied from place to place, depending on state and local bank involvement in loan programs (Rice [1977]). Therefore, although institutions might have marginally adjusted the amounts of work and loan aid included in the aid package, other unspecified variables also impacted on the levels of aid received (see Froomkin [1975]).

Income. If institutions are attempting to meet equal education opportunity objectives, low income students should be favored in the packaging of grant and scholarship aid relative to term-time work or student loans. The estimates shown in Tables VI-5 and VI-7 are generally consistent with this hypothesis. Consider a student from a family with income $1,000 lower than average. Grant and scholarship aid would have increased by about $45, term-time earnings by about $11, and loan proceeds by about $25. The estimated aid elasticities with respect to family income measure 2.1 for grant and scholarship aid, 1.5 for term-time work, and 1.7 for student loans./ In summary, the distribution of grant and scholarship aid appears to be most sensitive to differences in income.

At both high and low-to-middle income institutions, identical improvements in a student's family income brought about greater estimated changes in grant and scholarship aid than in term-time work or student loans. Moreover, for each type of aid (as with total aid), institutions

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/These estimates are calculated at the mean values of the relevant variables. See Appendix A.

enrolling relatively higher income students tended to discriminate more severely according to family income. The estimated income coefficients in equation (5.2) reveal that a $1,000 increment in available income generated a change in grant and scholarship aid of $57 from high income institutions compared to a change of $41 from low to middle income institutions. From equation (6.2) the income change resulted in estimated term-time earnings differences of $14 and $9 for high and low-to-moderate income institutions, respectively. With student loans, the difference in the estimated income effects came to $9, based on a $31 loan increment at high income institutions and a $22 loan increment at low-to-middle income institutions.

SAT Score. Institutions might be expected to reward higher ability students with greater amounts of grant and scholarship aid if enhancing institutional prestige constituted a major institutional objective. Consistent with this interpretation, the results in Tables VI-5 to VI-7 also indicate several interesting differences in the packaging of each type of aid by student SAT score.

According to equations (5.1) and (7.1), a 100 point improvement in SAT scores was associated with a $31 increase in grant and scholarship aid and a $4 increase in loan aid. Of interest, however, is the significant negative parameter estimate for the academic aptitude variable in term-time work (equation (6.1)). This result implies that the amount of work support declined by about $5 for every 100 point increase in SAT scores. Taken together, these findings suggest that institutions relied on term-time work aid instead of loans or grants and scholarships in financial aid packages to relatively lower ability students.

Tests for differences in packaging across institution selectivity categories provide similar results, with one notable exception. As before, student ability as measured by the SAT score was found to be negatively associated with the amount of term-time work support for all institution selectivity groups. However, while the highly selective institutions tended to differentiate their grant and scholarship aid and term-time work offers more sharply according to SAT scores, non-selective institutions were more sensitive to the student's academic aptitude in the distribution of loans. Specifically, an SAT score 10 percent greater than the mean score resulted in an estimated 12 percent larger grant and scholarship component, a 5 percent smaller term-time work component, and a 3 percent larger loan component at highly selective institutions. In contrast, the aid package at non-selective institutions (median SAT less than 800 or no SAT required) would have exhibited a grant and scholarship component increased by 5 percent above the average, a 3 percent smaller amount of term-time work aid, and loan proceeds 7 percent greater than the mean $201._/ That the non-selective institutions apparently discriminated more severely in the distribution of loan aid across ability groups might be the result of the heavy reliance on student loans to aid students at non-selective institutions._/

_/These estimates are calculated at the mean values of the relevant variables. See Appendix A.

_/Although no additional evidence is available to us, it may well be that the proprietary institutions, which accounted for about one-half of the full-time enrollments of non-selective institutions, attracted students with larger loan packages. That is, the marginally better students enrolled at the proprietary/vocational institutions if relatively larger aid packages (i.e., loans) were available.

Racial/Ethnic Group. With the exception of proceeds from a student loan, the estimates in Tables VI-5 to VI-7 imply that minorities received larger amounts of each type of aid. For grants and scholarships, entering full-time minority freshmen were offered and received over $200 more than their majority peers. The estimated mean difference of about $27 in term-time work support favored minorities as well. Again, these results -- most particularly the sizeable estimated differences in grant and scholarship aid by racial/ethnic group -- lend support to the hypothesis that institutions were attempting to increase minority enrollments in an effort to meet equal education opportunity goals.

Student Sex. The results from Tables VI-5 to VI-7 imply that the marginally greater amounts of aggregate aid to women students noted earlier came primarily from student loan proceeds. Specifically, from equation (7.2), females received an estimated $48 more in loan aid than their male counterparts. Notably, no significant difference between sexes in the amount of grant and scholarship aid or term-time work aid offered and received was evident (see equations [5.2] and [6.2]).

Student Budget. Costs of attendance significantly influenced the amounts of each type of aid in the financial aid package. Specifically, students enrolled at an institution with a student budget $1,000 greater than the average received an estimated $151 additional grant and scholarship aid, $20 additional term-time work aid, and approximately $106 additional loan support. Here, grants and scholarships and student loans exhibit the greatest response to cost differences. The estimated aid elasticities with respect to costs of attendance are 1.2, .4, and

1.2 for grant and scholarship aid, term-time work, and student loans, respectively._/

Institutional Aid Funds. Institutional aid funds evidenced a small impact on the distribution of each type of aid. The estimated coefficients in equations (5.2), (6.2), and (7.2) imply that an additional \$100 in institutional aid funds per FTE were associated with about \$12 more in grants and scholarships, compared to an additional \$5 in term-time work and about \$10 more in student loan proceeds. Apparently, our contention about the relatively small impact of institutional aid funds on the total amount of aid received applies equally to the three major types of aid.

2. The Packaging of Different Types of Aid Within Institutional Sectors

Tables VI-8 to VI-10 contain the results of the financial aid distribution function for each type of aid estimated separately within selected institutional sectors.

In general, the results of these regressions mirror the findings reported above. The amounts of different types of aid packaged to entering full-time freshmen at private four-year institutions tended to be most sensitive to the student's family income, academic aptitude, and racial/ethnic group. However, relative to average students within their selectivity and control groups, all four-year institutions packaged aid (particularly, grant and scholarship aid) similarly for more talented high school graduates. Finally,

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_/These estimates are calculated at the mean values of the relevant variables. See Appendix A.

Table VI-8

Determinants of Grant and Scholarship Aid to 1972-73 Entering Full-Time Freshmen by Institution Sector

(Underlined coefficients are significant at .05 level; standard errprs are in parentheses)

	DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
		Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
		AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_I	
(8.1)	Grant and Scholarship Aid, All Students R^2 = .24 F = 327.14	-.0407 (.0016)	-.0166 (.0022)	.2713 (.0175)	.1725 (.0175)	-.0810 (.0314)	-212.1 (17.82)	2.045 (11.02)	.1506 (.0052)	.1238 (.0182)	60.80
(8.2)	Grant and Scholarship Aid, Public 4-Year R^2 = .16 F = 90.98	-.0359 (.0019)	-.0021 (.0024)	.1918 (.0271)	.0778 (.0201)	.0110 (.0340)	-146.1 (21.06)	-3.584 (13.02)	.1152 (.0089)	.0857 (.0201)	87.53

(continued)

Table VI-8, concluded

	DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
		Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
		AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{s1})(SAT_k)$	R_k	X_k	$COST_k$	B_1	
(8.3)	Grant and Scholarship Aid, Public 2-Year	-.0174 (.0014)	-.0065 (.0040)	.0704 (.0201)		-.1057 (.0446)	-23.32 (16.80)	-27.36 (10.81)	.1360 (.0074)	-.0114 (.0266)	31.20
	R^2 = .20 F = 71.67										
(8.4)	Grant and Scholarship Aid, Private 4-Year	-.0924 (.0059)	-.0133 (.0063)	.4551 (.0799)	.1799 (.0423)	-.7786 (.1362)	-634.3 (59.92)	-42.02 (34.72)	.1325 (.0156)	.1705 (.0503)	652.4
	R^2 = .28 F = 96.81										

Table VI-9

Determinants of Term-Time Work Aid Packaged to 1972-73 Entering Full-Time Freshmen by Institutional Sector

(Underlined coefficients are significant at .05 level; standard errors are in parentheses)

	DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
		Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
		AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_I	
(9.1)	Term-Time Work, All Students	-.0091 (.0008)	-.0045 (.0011)	-.0404 (.0104)	-.0185 (.0085)	.0141 (.0153)	-26.88 (8.667)	-5.557 (5.360)	.0201 (.0025)	.0509 (.0088)	152.1
	R^2 = .04 F = 67.69										
(9.2)	Term-Time Work, Public 4-Year	-.0082 (.0010)	-.0045 (.0013)	-.0153 (.0141)	.0225 (.0105)	.0125 (.0178)	-44.47 (11.00)	-7.767 (6.798)	.0069 (.0047)	.0641 (.0105)	155.1
	R^2 = .06 F = 29.34										

(continued)

Table VI-9, concluded

	DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
		Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con-stant
		AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{s1})(SAT_k)$	R_k	X_k	$COST_k$	B_1	
(9.3)	Term-Time Work, Public 2-Year R^2 = .04 F = 14.11	-.0070 (.0016)	-.0023 (.0043)	-.0559 (.0219)		.0221 (.0486)	-64.78 (18.34)	.4034 (11.80)	.0579 (.0081)	-.0185 (.0290)	137.1
(9.4)	Term-Time Work, Private 4-Year R^2 = .05 F = 2.41	-.0119 (.0021)	-.0026 (.0023)	-.0321 (.0292)	-.0514 (.0155)	.0857 (.0498)	40.44 (21.93)	-15.75 (12.70)	.0186 (.0057)	.0153 (.0184)	130.0

Table VI-10

Determinants of Student Loan Aid Packaged to 1972-73 Entering Full-Time Freshmen by Institutional Sector

(Underlined coefficients are significant at .05 level; standard errors are parentheses)

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_l	
(10.1) Student Loan, All Students	-.0226 (.0013)	-.0086 (.0018)	.0411 (.0177)	.0309 (.0145)	.1226 (.0261)	7.666 (14.77)	-48.23 (9.135)	.1057 (.0043)	.0967 (.0151)	26.90
R^2 = .12 F = 143.60										
(10.2) Student Loan, Public 4-Year	-.0229 (.0018)	-.0011 (.0021)	-.0456 (.0243)	.0065 (.0181)	.1750 (.0305)	-12.94 (18.90)	-26.06 (11.68)	.0962 (.0080)	.0470 (.0181)	11.0
R^2 = .10 F = 49.88										

(continued)

Table VI-10, concluded

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_l	
(10.3) Student Loan, Public 2-Year R^2 = .09 F = 28.16	-.0100 (.0014)	-.0052 (.0038)	.0390 (.0190)		-.0519 (.0422)	31.75 (15.92)	-25.42 (10.24)	.0830 (.0070)	-.0360 (.0252	54.34
(10.4) Student Loan, Private 4-Year R^2 = .09 F = 26.26	-.0420 (.0043)	-.0102 (.0045)	.0303 (.0579)	-.0724 (.0307)	-.0463 (.0988)	82.20 (43.46)	-52.92 (25.18)	.0643 (.0113)	.0287 (.0365)	271.0

the packaging of different types of aid to freshmen at public two-year institutions was least affected by the specified student, family, and institutional attributes.

These results are discussed in greater detail below.

Income. Within each institutional sector, the packaging of grant and scholarship aid was most sensitive to differences in available income. This result likely reflects the larger role of institutions in administering (and targeting) gift aid. Beyond this, private four-year institutions tended to discriminate more sharply by family income in the distribution of each type of aid. Since the private institutions enrolled relatively more freshmen from higher income families, this differentiation should not be surprising.

Overall, according to the estimates in equation (8.1), entering full-time freshmen with family incomes $1,000 greater than the average received $41 to $57 less in grant and scholarship aid. Among institutional sectors, the $1,000 income increment reduced gift aid by an estimated $36 at public four-year institutions, $17 at public two-year institutions, and $92 to $106 at private four-year colleges. Notably, only in the private four-year sector did institutions enrolling higher income students package grant and scholarship aid differently than their low-to-middle income sister institutions. In this case, the higher income private four-year institutions increased grant and scholarship aid at a greater rate for relatively lower income freshmen, in the amount of $106 per $1,000 in family income compared to $92 per $1,000 in family income at the low-to-middle income private four-year college.

In the packaging of student work aid, institutions exhibited similar adjustments in the amounts of aid for small differences in family income. From equations (9.2) to (9.4), a one percent increase in family income reduced the amount of student earnings by one to three percent._/ Within sectors, differences in the packaging of term-time work aid between higher and low-to-middle income institutions emerged only among public four-year institutions..

Finally, differences in family income produced roughly comparable changes in the amounts of student loans across institutional sectors. The adjustments to student loans implied in Table VI-10 ranged from 19 percent per ten percent difference in family income at public four-year institutions to 21 percent per ten percent difference in family income at private four-year institutions. Notably, only private four-year institutions differed in the packaging of student loans according to the median family income of their enrolled students. Specifically, a ten percent increase in income reduced the loan component of the aid package by 14 percent at the low-to-middle income private four-year college compared to a 19 percent reduction at its upper-middle income sister institution.

SAT Score. Across all institutional sectors, student ability produced the largest adjustments in the packaging of grant and scholarship aid. Differences emerged, however, among institution groups in the magnitude of the adjustments. Tables VI-8 to VI-10 contain estimates of the effects of student SAT scores on the packaging of different types of aid.

Consistent with the results presented above, grant and scholarship aid and term-time earnings packaged to entering full-time

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_/These estimates are calculated at the mean values of the relevant variables. See Appendix A.

freshmen at public two-year institutions were least influenced by measured academic aptitude. From equations (8.2) and (9.2), a 100 point improvement in the SAT score for these students resulted in changes of less than $10 in the amounts of each type of aid received.

Packaging among four-year institutions differed by sector and selectivity group. Non-selective public four-year institutions tended to increase grant and loan aid, while decreasing work aid, to better students. From equations (8.1), (9.1), and (10.1), an entering freshman presenting an SAT score 100 points greater than the average would have received an estimated $19 in additional grant and scholarship aid and an added $18 in loan proceeds. Term-time earnings would have been reduced by about $2. In contrast, a similar freshman at a non-selective private four-year institution received a package with smaller amounts of both grant and scholarship aid and term-time earnings (-$32 and -$3, respectively). The package included a slightly larger loan component (see equations (8.4), (9.4), and (10.4)).

Among highly selective institutions, the patterns of packaging between four-year sectors were more similar. Private four-year institutions increased grant and scholarship aid by an estimated $64 and marginally decreased term-time work aid by about $8 for every 100 point improvement in SAT scores. Packages at highly selective public four-year institutions were similarly affected. The more able entering full-time freshman received about $27 more gift aid and hardly a dollar more in earnings._/

_/An interesting result, average loan aid demonstrated no significant association with SAT score at highly selective institutions. Although not significant within sectors, the high selective-SAT score measure is significant overall. Several explanations would be consistent with these results. Certainly, the partitioning removes some of the variation and reduces the sample sizes. Further, able students attending private two-year and professional schools who might be recipients of larger loans are included in the total but not partitioned out in Table VI-10.

These comparisons are of interest since, taken as a whole, they indicate the nature and limited extent of differences in attempts to attract more talented high school graduates with financial aid. At first glance, highly selective private and public four-year institutions improved aid packages to the more able entering full-time freshmen by providing the greatest increase in gift aid relative to term-time work and loan aid. The less selective institutions also tended to increase grant and scholarship aid for the better students, but only by two thirds the amount offered and received in the more selective institutions.

Looked at another way, however, the institutions appear to have been competing on essentially equal footing. The gift aid elasticities with respect to student ability were .8 for all four-year colleges of middle and high selectivity. Said another way, a freshman with an SAT score ten percent greater than the average of freshmen attending similar institutions (by control and selectivity) received 8 percent more in grant and scholarship aid. This latter result suggests that institutions packaged aid similarly to students whose academic abilities differed in roughly the same proportion from their own students. While more talented freshmen received more favorable aid packages, colleges within institutional sectors did not differ markedly in their packaging of aid to these students.

Racial/Ethnic Group. Evidence continues to show that minorities are under-represented at four-year institutions. Efforts to redress the disparities in enrollment mix would call for these institutions to package relatively larger amounts of gift aid to minority students. In fact, data from the NLS sample, presented in Table VI-8, suggest that in 1972-73, four-year institutions pursued this strategy. On average, minority freshmen received $146 more grant and scholarship aid at public four-year institutions than did their majority peers. At private four-year institutions, the estimated difference came to $634. Not surprisingly, no significant difference in gift aid according to racial/ethnic group emerged among public two-year college freshmen.

From Tables VI-9 and VI-10, minority students tended to get slightly more in term-time earnings and about the same amount of student loans as their fellow students. No large differences were apparent across institutional sectors.

Student Budget. Student costs of attendance marginally increased the need for and receipt of additional aid funds among all institutional sectors. Throughout, variations in the budget induced the largest differences in aid received by freshmen at public two-year colleges. A ten percent larger budget increased the mean amounts of gift aid, term-time earnings, and student loan proceeds by an estimated 18 percent, 12 percent, and 19 percent, respectively._/ Since few public two-year college students could lay claim to family resources, student costs reflect the major differences in need.

Institutional Aid Funds. As before, institutional aid funds per FTE exhibited a small estimated influence on the amounts of different types of aid offered and received. Within each sector, a ten percent increase in institutional effort per FTE generated under $5 more of each type of aid.

Notably, the size of the estimated effect differed only slightly across sectors.

_/The insignificant influence of student budgets on earnings at public four-year colleges might result from less needy students taking part-time jobs. See the estimates of the determinants of College Work-Study earnings below.

D. The Packaging of Federal Aid

Up to this point, the discussion and analysis has focused upon the key determinants of the distribution of financial aid from all sources. Implicitly, the importance of specified determinants has been taken as evidence of the intent of all donors. Institutions can make adjustments to aid packages which reflect institutional objectives. For this reason, the interpretation of the marginal effects (measured by the regression coefficients) refers primarily to institutional objectives.

To the extent that the objectives of Federal aid programs differ from institutional goals, the packaging of student aid will be modified. Clearly, the intent of the Office of Education student aid programs is to promote equal educational opportunity._/ In this section, the distribution of Federal aid, including aid provided through the Educational Opportunity Grant program and College Work-Study program, is examined._/ These estimates understate the impact of Federal aid programs, since many contain matching provisions which direct non-Federal aid to the Federally-aided student (see Chapter IV).

_/The language in the law is inconsistent at several points and includes no direct comprehensive statement of intent. Nevertheless, both the history and provisions of the legislation do indicate this general thrust. (See College Entrance Examination Board, Washington Office [1974]).

_/It should be noted that the classification of aid as "Federal" aid involves some arbitary judgments. State loan programs, utilizing the Federal 80 percent reinsurance and interest subsidies, are defined as Federal aid even though the states run the programs and lending institutions provide the dollars. Similary, College Work-Study and Vocational Rehabilitation programs may include Federal, state, and institutional dollars; support from these programs is, nevertheless, classified here as "Federal" aid.

Perhaps a more serious limitation is the accuracy of student reporting. Students aided through College Work-Study may work side by side with students in an institutional work program. Many workers -- in either program -- would be unaware of the difference. In an earlier report, Wagner and Tenison [1976] found the recipient shares and average amounts of aid reported for specific sources of aid in the NLS did not differ markedly from program data. These findings permit some confidence in the estimates developed below.

1. Total Federal Aid

Table VI-11 contains the results of the estimated student aid distribution function for all Federal aid across institutional sectors. The adjusted R^2 of .16 to .20 compare favorably with the "fit" exhibited for total aid, discussed above. Since an estimated 56 percent of all aided NLS full-time freshmen reported at least some Federal aid, this result should not be surprising.

Income. The student's family resources influenced the distribution of Federal aid in 1972-73, as expected from equation (11.1). And additional $1,000 in income reduced the Federal aid received by $45 among students at low-to-middle income institutions and by $57 to freshmen enrolled at higher income institutions.

The packaging of Federal aid responded more sharply than total aid from all sources to difference in family income. Whereas a ten percent decrease in income produced an estimated 18 percent increase in the aid package, Federal aid increased by almost 20 percent.[/]

Across sectors, the private four-year institutions tended to discriminate more sharply by income in the packaging of Federal aid. Private four-year college freshmen from families with income $1,000 less than average received an estimated $67 to $80 more Federal aid.

SAT Score. Academic aptitude proved to be a nearly insignificant influence on the distribution of Federal aid. Notably, the SAT score weakly encouraged greater amounts of Federal aid only at non-selective

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[/] The estimates are calculated at the mean values of the relevant variables. See Appendix A.

Table VI-11

Determinants of Total Federal Aid Packaged to 1972-73 Entering Full-Time Freshmen by Institutional Sector

(Underlined coefficients are significant at .05 level; standard errors are parentheses)

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_I	
(11.1) Total Federal Aid, All Students	-.0450 (.0017)	-.0120 (.0022)	.0193 (.0217)	-.0016 (.0178)	.1034 (.0320)	-121.4 (18.17)	-52.07 (11.24)	.1399 (.0053)	.1877 (.0186)	295.6
R^2 = .19 F = 247.35										
(11.2) Total Federal Aid, Public 4-Year	-.0456 (.0023)	-.0034 (.0028)	-.0175 (.0319)	.0555 (.0237)	.1127 (.0401)	-198.3 (24.80)	-52.52 (15.33)	.1229 (.0105)	.2042 (.0237)	401.5
R^2 = .20 F = 116.72										

(continued)

Table VI-11, concluded

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_I	
(11.3) Total Federal Aid, Public 2-Year	-.0300	-.0096	-.0458		-.0365	-28.78	-66.51	.1554	-.0537	157.8
	(.0022)	(.0063)	(.0317)		(.0063)	(26.54)	(17.08)	(.0117)	(.0420)	
R^2 = .16										
F = 54.28										
(11.4) Total Federal Aid, Private 4-Year	-.0670	-.0129	-.0285	-.0463	.0785	-31.89	-21.46	.1195	.0512	550.7
	(.0051)	(.0054)	(.0696)	(.0368)	(.1186)	(52.21)	(30.24)	(.0136)	(.0439)	
R^2 = .16										
F = 47.86										

institutions. In part, this could reflect the use of Federal loans among freshmen otherwise unable to tap financial aid sources.

Across institutional sectors, the estimated influence of SAT scores on the allocation of Federal aid was quite small or insignificant. That is, for every 10 percent variation in the measured score, Federal aid differed by less than three percent.

Racial/Ethnic Group. Overall, entering full-time minority freshmen received about $120 more in Federal aid than their majority peers. Further, Federal aid programs targeted funds to minority students to a greater extent than did total aid from all sources. To illustrate, Federal aid accounted for slightly more than one-half of the average aid received by all entering full-time freshmen. Minorities received $200 more in total aid and an estimated $120 more in Federal aid; the differential measured about 60 percent.

From equations (11.3) and (11.4), Federal aid did not differ significantly between the racial/ethnic groups at public two-year and private four-year institutions. Generally lower income students and limited use of Federal aid might have accounted for the result at public two-year colleges. The quite different distribution of Federal aid from different programs -- with Federal loans utilized by majority students and campus-based aid packaged to minorities -- could explain the result within the private four-year sector.

Student Budget. According to the estimates in Table VI-11, Federal aid was sensitive to differences in costs of attendance, across all sectors. Institutions with budgets $500 above the average included about $60 more Federal aid in the package.

Compared to total aid from all sources, Federal aid was equally sensitive to student costs of attendance. Institutions with budgets ten percent above the average offered and awarded ten percent larger aid packages and included ten percent more Federal aid.

Institutional Aid Funds. From equation (11.1), greater amounts of institutional aid funds per FTE were associated with larger amounts of Federal aid in the package. The influence, however, was marginal: a ten percent increase in institutional aid efforts increased the Federal aid amount by about one percent. Since the Federal Guaranteed Loan program dwarfed the campus-based programs (which included matching requirements), this result should not be surprising.

2. Campus-Based Federal Aid: EOG and CW-S

In Tables VI-12 and VI-13, the OLS estimates for the distribution of Initial-year Educational Opportunity Grants (EOG) and College Work-Study earnings (CW-S) are presented.

Income. Institutions targeted both EOG and Work-Study awards on lower income students and to a greater extent than all gift aid or work aid. Specifically, entering full-time freshmen with family incomes ten percent less than the average income received 36 percent greater EOG awards and 24 percent greater CW-S stipends. For all grant and scholarship aid and all term-time work aid, an identical income difference would have increased the packaged amounts by 22 and 21 percent, respectively. These differences were exhibited within each institutional sector.

SAT Score. Student academic aptitude weakly influenced the size of the EOG awards. From Table IV-12, only the EOG packaging at private

Table VI-12

Determinants of Educational Opportunity Grants Packaged to 1972-73 Entering Full-Time Freshmen by Institutional Sector

(Underlined coefficients significant at .05 level; standard errors in parentheses)

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{s1})(SAT_k)$	R_k	X_k	$COST_k$	B_I	
(12.1) EOG, All Students R^2 = .11 F = 133.43	-.0121 (.0016)	-.0009 (.0007)	-.0002 (.0073)	.0015 (.0060)	.0017 (.0108)	-78.37 (6.147)	-7.420 (3.802)	.0188 (.0018)	.0425 (.0063)	120.4
(12.2) EOG, Public 4-Year R^2 = .17 F = 92.13	-.0117 (.0007)	-.0003 (.0009)	.0040 (.0104)	.0079 (.0077)	-.0043 (.0131)	-90.00 (8.112)	-13.85 (5.015)	.0197 (.0034)	.0842 (.0078)	119.2

(continued)

Table VI-12, concluded

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con-stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_I	
(12.3) EOG, Public 2-Year	-.0086 (.0007)	.0008 (.0020)	-.0023 (.0101)		-.0152 (.0225)	-31.93 (8.474)	-18.94 (5.452)	.0274 (.0037)	-.0209 (.0134)	60.62
$R^2 = .11$ F = 34.73										
(12.4) EOG, Private 4-Year	-.0197 (.0019)	.0018 (.0020)	-.0502 (.0256)	.0025 (.0136)	.0147 (.0436)	-104.1 (19.21)	12.28 (11.13)	.0149 (.0050)	.0002 (.0161)	244.0
$R^2 = .11$ F = 31.00										

Table VI-13

Determinants of College Work-Study Aid Packaged to 1972-73 Entering Full-Time Freshmen by Institutional Sector

(Underlined coefficients significant at .05 level; standard errors are in parentheses)

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con-stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_l	
(13.1) CW-S, All Students	-.0084 (.0005)	-.0013 (.0007)	-.0277 (.0071)	-.0125 (.0059)	.0215 (.0105)	-42.17 (5.978)	-19.98 (3.698)	.0169 (.0017)	.0435 (.0061)	113.7
R^2 = .07 F = 82.52										
(13.2) CW-S, Public 4-Year	-.0081 (.0007)	-.0009 (.0009)	.0050 (.0102)	-.0117 (.0076)	.0153 (.0128)	-74.68 (7.928)	-16.28 (4.901)	.0075 (.0034)	.0635 (.0076)	122.7
R^2 = .11 F = 56.06										

(continued)

Table VI-13, concluded

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Inst'l Aid Budget	Con- stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{s1})(SAT_k)$	R_k	X_k	$COST_k$	B_1	
(13.3) CW-S, Public 2-Year	-.0062 (.0009)	-.0015 (.0024)	-.0468 (.0123)		-.0058 (.0273)	-57.62 (10.30)	-22.08 (6.630)	.0418 (.0045)	.0059 (.0163)	78.29
R^2 = .08 F = 27.27										
(13.4) CW-S, Private 4-Year	-.0105 (.0017)	-.0009 (.0018)	-.0654 (.0226)	-.0118 (.0119)	.1139 (.0385)	1.890 (16.95)	-25.07 (9.818)	.0099 (.0044)	.0153 (.0142)	165.2
R^2 = .06 F = 16.38										

four-year institutions showed any association with SAT score. Here, a ten percent improvement in SAT scores reduced the EOG award by an estimated 6 percent. On the other hand, College Work-Study aid tended to go to lower ability students within all sectors (although no significant differences in packaging CW-S awards were apparent among public four-year college freshmen). In general, a ten percent improvement in scores resulted in a 6 to 10 percent reduction in CW-S earnings.

Racial/Ethnic Group. As equations (12.1) to (12.4) illustrate, institutions clearly favored minorities in packaging EOG awards. The mean differences were quite pronounced, with typical minority students at four-year institutions receiving nearly $100 more EOG aid than their majority peers, other things equal.

Other things equal, entering full-time minority freshmen received about $40 more in CW-S stipends than did majority freshmen. Across sectors, significant differences in stipends between racial/ethnic groups emerged only among freshmen in public institutions (see equations (13.2) and (13.3)). Private four-year institutions were likely to have alternate sources of aid. Hence, consistent with the results presented above, the findings that minority freshmen received about the same amount of earnings from College Work-Study programs as other freshmen implies that these students were receiving non-work (primarily grant) aid._/

_/Reporting errors could also account for the insignificant results. To the extent that private institutions administer larger institutional work programs, and both CW-S and institutional program workers listed their earnings under College Work-Study, the estimated coefficient would, of course, be biased. No obvious evidence in favor of this interpretations is available. If such reporting errors exist, they probably should apply equally within the public four-year sector.

Student Sex. As indicated in both Tables VI-12 and VI-13, female freshmen tended to receive larger amounts of EOG (at public institutions) and CW-S (at all institutions). The differences, however, were generally less than $25. For the most part, this result probably stemmed from the smaller expected contribution (hence, greater need) for female students.

Student Budget. Differences in student costs of attendance exhibited the expected influence on EOG and CW-S awards. From equation (12.1), a ten percent larger student budget elicited a nine percent greater EOG award. This was less than the estimated effect of student costs on the amount of total grant and scholarship aid received. The EOG program requirement limiting awards to the lesser of one-half of need or $1,500 dampened the impact of greater costs.

College Work-Study stipends increased by about 8 percent for every 10 percent increase in costs. This was almost twice the increase exhibited for all term-time earnings. In large part, the difference here reflected the need-based packaging of College Work-Study stipends. If non-needy freshmen took on part-time jobs, the measured association between all earnings and student costs would be reduced.

Institutional Aid Budget. From the estimates in equations (12.1) and (13.1), the institutional commitment of resources to student aid significantly influenced the packaging of EOG and CW-S awards. It is noteworthy that the marginal impact was slight: an increase of one percent institutional effort (about $15,000) raised the EOG and CW-S stipends an estimated .16 and .15 percent, respectively. These effects demonstrate the limited constraint imposed by the matching requirements. Institutions which were unable to commit a larger amount of their own resources to student aid received only slightly smaller Federal allocations and packaged somewhat smaller award

Across institutional sectors, the level of institutional aid funds influenced the amount of the EOG or CW-S award only among public four-year institutions. Within the private four-year sector, institutional student aid funds likely exceeded the necessary matching requirements at most institutions. Hence, marginal improvements in institutional aid funds per FTE would have tended to attract no additional Federal dollars and no change in award amounts. On the other hand, the relatively low participation of public two-year colleges in the campus-based programs might have accounted for the insignificant effect of institutional aid resources on EOG and CW-S packaging. Simply, if these institutions did not apply for Federal campus-based funds, improvements in institutional effort would bring forth no change in aid from these programs.

E. Conclusions

Several interesting and useful results have emerged from the empirical tests of hypotheses on student financial aid packaging.

First, the student's financial need, as influenced by family income and the level of the student expense budget, was found to be most important in the packaging of aid.

With respect to measures of income, the key results can be summarized as follows:

1) The total amount of aid exhibited an elastic response to changes in income: entering full-time freshmen from families with incomes ten percent less than average received 18 percent more financial aid dollars.

2) Of all types, grant and scholarship aid demonstrated the largest response to differences in family income.

3) Aid from Federal sources tended to be distributed more toward the lower income, full-time freshmen than was non-Federal aid of similar types. In particular, a ten percent difference in family income produced a 20 percent change in the amount of Federal aid, a 35 percent change in the EOG award, and a 25 percent change in the CW-S stipend. For all financial aid, all grant and scholarship aid, and all term-time work proceeds, the ten percent income difference would have induced changes in amounts of 18, 22, and 15 percent, respectively.

4) Across selected institutional sectors, aid packages at private four-year colleges tended to be most sensitive to differences in family incomes. Aid packages at public two-year institutions were least affected. This latter result probably reflected the public two-year college freshmen's reliance on earnings from term-time jobs not controlled by institutional aid offices.

5) Even within institutional sectors, institutions enrolling higher income students tended to discriminate more severely according to family income. Overall, full-time freshmen from families with incomes ten percent less than average received 15 percent more aid dollars at institutions with more low-to-middle income students and 22 percent larger packages at colleges enrolling more upper middle income students.

Differences in costs of attendance also influenced the amount and composition of the financial aid package. Four findings illustrate how student expense budgets affected the packaging of aid:

1) Full-time freshmen attending higher priced institutions were more likely to receive financial aid, and in larger amounts. A $1,000 difference in student budgets (the approximate 1972-73 public/private tuition gap) was associated with a 1.1 point difference in the probability of receiving aid. Expressed another way, a ten percent greater student budget increased the size of the financial aid package by ten percent.

2) Of all types, grant and scholarship aid was most responsive to differences in student costs. A student budget ten percent greater than average increased the amount of gift aid by 12 percent, the amount of student loan proceeds by 11 percent, and the amount of term-time earnings by by 4 percent.

3) Student costs of attendance exhibited a roughly proportional influence on the packaging of aid from Federal sources: ten percent greater costs were associated with a ten percent larger package.

4) Across institutional sectors, aid packages at public two-year institutions were most sensitive to differences in student costs. This result applied as well to the packaging of different types of financial aid and to the distribution of Federal aid. Since the public two-year sector enrolled relatively lower income students, costs probably reflected a major source of variation in the need for (and use of) student assistance.

Second, entering full-time minority freshmen received larger, more favorable aid packages than their majority peers. At least in 1972-73, evidence from the NLS suggests a commitment to equal educational opportunity among donors and administrators of student financial aid. In particular:

1) Holding income, SAT score, and student expenses (among other variables) fixed, minority freshmen were about 7 percentage points more likely to receive some non-family financial support.

2) Minority freshmen received an estimated $200 more gift aid than their peers. Differences in term-time work earnings and student loan proceeds across racial/ethnic groups were much less.

3) Other things equal, Federal aid programs targetted funds to minority freshmen to a greater extent than did non-Federal aid sources.

4) Across institutional sectors, aid packages at private four-year colleges exhibited the greatest absolute dollar difference favoring minorities -- an estimated difference of $495 in total aid and $634 in grant and scholarship aid. Smaller differences between minority and majority aid packages emerged among the public institutions. Here, the implicit tuition subsidy reduced the financial needs of all students.

Third, student achievement/ability, as measured by the student's SAT score, influenced the packaging of different types of aid with the higher ability students recording larger amounts of gift aid. The effects of the student's SAT score on packaging, however, appeared to be -- in absolute terms -- relatively small. Specifically:

1) A 100 point improvement in the SAT score increased the likelihood of receiving aid by 2 percentage points. Further, the aggregate amount of aid increased about 4 percent for every ten percent increase in the SAT score.

2) Higher ability students tended to utilize larger amounts of grant and scholarship aid and smaller earnings from a term-time job than did their lower ability peers. A student with SAT scores ten percent above the average recorded a 9 percent larger amount of gift aid, a 2 percent larger student loan, and a 4 percent smaller amount of term-time earnings.

3) Highly selective institutions apparently discriminated more severely according to student achievement ability in packaging aid. There is little evidence here that the less selective institutions used more favorable financial aid packaging to attract the most talented high school graduates. Moreover, the selective four-year public and private institutions competed on roughly equal footing: in both sectors, entering freshmen with SAT scores ten percent better than average received 8 percent larger amounts of grant and scholarship aid.

4) The amount of Federal aid was least influenced by student ability. A ten percent increase in SAT scores induced a 3 percent increase in the Federal aid component. Within specific programs, the effect differed: Overall, EOG awards increased 6 percent, while CW-S stipends remained the same for every 10 percent improvement in the SAT score.

Fourth, the institutional commitment of resources to student aid marginally affected the allocation of all types of aid, Federal and non-Federal. This result is somewhat surprising, given the matching requirements in Federal campus-based student aid programs. Apparently, across all institutions, the matching fund requirements were so modest and/or campus-based Federal aid accounted for such a small share of available student aid resources that the influence of the level of institutional student aid funds on packaging was negligible More specifically:

1) A ten percent increase in the pool of institutional resources per FTE (about $150,000 at the "average" institution) increased the chances of receiving aid by .13 percentage points and the aggregate amount of the aid package by .7 percent.

   Among Federal campus-based aid programs, the level of institutional aid funds per FTE exhibited a somewhat greater influence on the packaging of EOG and CW-S awards. However, the effects remained relatively slight: a ten percent increase in institutional aid funds induced only 2 percent greater EOG awards and CW-S stipends.

2) Across institutional sectors, aid packages were marginally affected by the level of institutional aid funds per FTE. This finding applied to the better-funded institutional aid programs at private institutions and to the poorly-funded programs in the public two-year sector.

Fifth, female freshmen received slightly larger aid packages than male freshmen, other things equal. The difference in aid was funded primarily through slightly larger student loans.

Appendix VI-A

Means, Elasticities, and Case Counts

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TABLE A-1

Means for Selected Variables Within Partitioned Groups

(Standard deviations in parentheses below calculated means)

Variable[a]		Partition			
		TOTAL	INSTITUTION SECTOR		
			Public 4	Public 2	Private 4
AY_k	Total	4,032 (4,026)	4,043 (3,986)	3,312 (3,930)	4,723 (4,066)
	Low-to-Middle	2,577 (4,026)	3,573 (3,987)	3,210 (3,884)	3,729 (4,002)
	Upper-Middle	5,363 (3,836)	5,170 (3,773)	6,102 (3,665)	5,561 (3,896)
Y_k	Total	13,573 (7,302)	13,716 (7,228)	12,241 (6,696)	15,409 (7,704)
	Low-to-Middle	11,144 (6,561)	10,897 (6,924)	12,069 (6,584)	13,343 (7,146)
	Upper-Middle	16,430 (7,605)	15,928 (7,476)	16,491 (6,703)	17,111 (7,702)
SAT_k	Total	837 (294)	897 (261)	642 (273)	962 (259)
	Non-Selective	674 (285)	776 (329)	664 (304)	689 (222)
	Highly Selective	976 (258)	972 (275)	NA	1,125 (215)
R_k		.88	.87	.87	.89
X_k		.53	.52	.57	.53
$COST_k$		2,238 (1,231)	2,017 (753)	1,350 (742)	3,538 (1,256)
B_1		173 (316)	165 (326)	61 (202)	305 (354)

---

[a] Subgroups for income and ability refer to institution partitions.

TABLE A-1, continued, p.2

Variable		Partition			
		TOTAL	INSTITUTION SECTOR		
			Public 4	Public 2	Private 4
Receipt	Total	55.73	55.68	48.98	64.85
INSTITUTION MEDIAN INCOME					
	Low-to-Middle	56.28	57.14	49.30	69.90
	Upper-Middle	55.39	51.05	45.48	60.60
INSTITUTION ACHIEVEMENT/ABILITY					
	Non-Selective	59.60	69.64	47.44	70.71
	Highly Selective	63.57	62.98	NA	64.06
Total Aid	Total	632 (900)	528 (694)	309 (574)	1,173 (1,226)
INSTITUTION MEDIAN INCOME					
	Low-to-Middle	557 (792)	519 (682)	312 (574)	1,139 (1,084)
	Upper-Middle	812 (1,019)	534 (712)	224 (436)	1,191 (1,331)
INSTITUTION ACHIEVEMENT/ABILITY					
	Non-Selective	548 (763)	911 (862)	232 (361)	1,072 (929)
	Highly Selective	1,005 (1,319)	672 (771)	NA	1,345 (1,474)

TABLE A-1, continued, p.3

Variable				Partition	
		TOTAL	INSTITUTION SECTOR		
			Public 4	Public 2	Private 4
Grant and Scholarship Aid	Total	292 (607)	239 (451)	105 (282)	638 (943)
INSTITUTION MEDIAN INCOME					
	Low-to-Middle	222 (476)	220 (430)	106 (286)	536 (770)
	Upper-Middle	442 (807)	264 (479)	40 (132)	690 (1,039)
INSTITUTION ACHIEVEMENT/ABILITY					
	Non-Selective	143 (377)	324 (464)	60 (152)	454 (710)
	Highly Selective	608 (1,092)	339 (528)	NA	849 (1,202)
Term-Time Work Aid	Total	100 (263)	86 (222)	101 (282)	118 (299)
INSTITUTION MEDIAN INCOME					
	Low-to-Middle	107 (271)	97 (244)	104 (284)	144 (298)
	Upper-Middle	76 (231)	66 (176)	94 (182)	93 (291)
INSTITUTION ACHIEVEMENT/ABILITY					
	Non-Selective	104 (286)	156 (282)	122 (266)	220 (368)
	Highly Selective	77 (212)	81 (214)	NA	66 (186)

TABLE A-1, continued, p.4

Variable		Partition			
		TOTAL	INSTITUTION SECTOR		
			Public 4	Public 2	Private 4
Student Loan Aid	Total	201 (468)	169 (390)	61 (250)	375 (609)
INSTITUTION MEDIAN INCOME					
	Low-to-Middle	185 (435)	167 (378)	61 (248)	388 (583)
	Upper-Middle	258 (547)	169 (412)	0 (0)	385 (680)
INSTITUTION ACHIEVEMENT/ABILITY					
	Non-Selective	250 (535)	384 (621)	19 (132)	354 (500)
	Upper-Middle	292 (580)	193 (406)	NA	423 (744)
Federal Aid	Total	330 (603)	290 (544)	175 (434)	553 (760)
INSTITUTION MEDIAN INCOME					
	Low-to-Middle	310 (581)	292 (545)	173 (432)	612 (776)
	Upper-Middle	362 (643)	278 (537)	138 (418)	497 (735)
INSTITUTION ACHIEVEMENT/ABILITY					
	Non-Selective	337 (610)	606 (753)	81 (266)	754 (680)
	Highly Selective	410 (718)	358 (612)	NA	481 (694)

TABLE A-1, concluded, p.5

Variable		Partition			
		TOTAL	INSTITUTION SECTOR		
			Public 4	Public 2	Private 4
Educational Opportunity Grant (EOG)	Total	46 (192)	44 (174)	28 (134)	76 (271)
INSTITUTION MEDIAN INCOME					
	Low-to-Middle	43 (180)	44 (173)	28 (134)	89 (282)
	Upper-Middle	48 (205)	42 (172)	17 (95)	64 (257)
INSTITUTION ACHIEVEMENT/ABILITY					
	Non-Selective	35 (163)	109 (258)	10 (53)	207 (356)
	Highly Selective	56 (236)	62 (224)	NA	62 (274)
College Work-Study (CW-S)	Total	50 (183)	45 (164)	40 (162)	77 (233)
INSTITUTION MEDIAN INCOME					
	Low-to-Middle	52 (184)	49 (174)	40 (162)	96 (247)
	Upper-Middle	42 (171)	33 (133)	31 (129)	60 (217)
INSTITUTION ACHIEVEMENT/ABILITY					
	Non-Selective	36 (158)	128 (271)	24 (109)	216 (362)
	Highly Selective	37 (137)	33 (124)	NA	51 (161)

TABLE A-2

Elasticities: Percent Change in Total Aid Induced By a One Percent Change in Selected Variables[a]

Variable[b]		Partition			
		TOTAL	INSTITUTION SECTOR		
			Public 4	Public 2	Private 4
AY_k	Total	-.54	-.57	-.44	-.65
	Low-to-Middle	-.35	-.49	-.40	-.46
	Upper Middle	-.71	-.78	-1.55	-.82
Y_k	Total	-1.84	-1.94	-1.62	-2.13
	Low-to-Middle	-1.50	-1.78	-1.52	-1.66
	Upper Middle	-2.18	-2.39	-3.06	-2.54
SAT_k	Total	.37	.25	--	.52
	Non-Selective	.32	.29	--	-.13
	High Selective	.42	.34	NA	.55
$COST_k$		1.01	.84	1.24	.69
B_1		.07	.06	--	.06

---

[a] Elasticities calculated at mean values of relevant variables. Specifically,

$$\varepsilon_{i,h,k} = \frac{\hat{\beta}_{i,h,k} \times (.01 \times \bar{Z}_{h,k})}{\bar{A}_{i,k}}$$

where,

$\varepsilon_{i,h,k}$ = calculated elasticity of the i^{th} aid type for variable h within the k^{th} partition

$\hat{\beta}_{i,h,k}$ = estimated regression coefficient for variable h with respect to the i^{th} aid type within the k^{th} partition

$\bar{Z}_{h,k}$ = mean value of variable h within the k^{th} partition (from Table A-1)

$\bar{A}_{i,k}$ = mean value of the i^{th} type of aid within the k^{th} partition (from Table A-1)

Where regression coefficients are insignificant, no elasticities are computed.

[b] Sub-groups for income and ability variables refer to institution partitions.

TABLE A-3

Elasticities: Percent Change in Grant and Scholarship Aid Induced by a One Percent Change in Selected Variables[a]

Variable[b]		Partition			
		TOTAL	INSTITUTION SECTOR		
			Public 4	Public 2	Private 4
AY_k	Total	-.63	-.62	-.57	-.74
	Low-to-Middle	-.47	--	--	-.64
	Upper Middle	-.70	--	--	-.85
Y_k	Total	-2.11	-2.09	-2.09	-2.43
	Low-to-Middle	-2.04	--	--	-2.30
	Upper Middle	-2.13	--	--	-2.62
SAT_k	Total	.88	.80	.41	.94
	Non-Selective	.58	--	-.39	-.49
	High Selective	.98	.77	NA	.84
$COST_k$		1.15	.97	1.80	.74
B_1		.07	.06	--	.08

---

[a] Elasticities calculated at mean values of relevant variables. Specifically,

$$\varepsilon_{i,h,k} = \frac{\hat{\beta}_{i,h,k} \times (.01 \times \bar{Z}_{h,k})}{\bar{A}_{i,k}}$$

where,

$\varepsilon_{i,h,k}$ = calculated elasticity of the i^{th} aid type for variable h within the k^{th} partition

$\hat{\beta}_{i,h,k}$ = estimated regression coefficient for variable h with respect to the i^{th} aid type within the k^{th} partition

$\bar{Z}_{h,k}$ = mean value of variable h within the k^{th} partition (from Table A-1)

$\bar{A}_{i,k}$ = mean value of the i^{th} type of aid within the k^{th} partition (from Table A-1)

Where regression coefficients are insignificant, no elasticities are computed.

[b] Sub-groups for income and ability variables refer to institution partitions.

TABLE A-4

Elasticities: Percent Change in Term-Time Work Aid Induced by a One Percent Change in Selected Variables[a]

Variable[b]		Partition			
		TOTAL	INSTITUTION SECTOR		
			Public 4	Public 2	Private 4
AY_k	Total	-.44	-.47	-.24	-.55
	Low-to-Middle	-.22	-.30	--	--
	Upper Middle	-.96	-1.00	--	--
Y_k	Total	-1.47	-1.58	-.87	-1.79
	Low to-Middle	-.95	-1.09	--	--
	Upper Middle	-2.90	-3.06	--	--
SAT_k	Total	-.44	--	-.36	-.64
	Non-Selective	--	--	--	--
	High Selective	-.76	.27	NA	-.88
$COST_k$		.45	--	1.16	.56
B_1		.09	.12	--	--

---

[a] Elasticities calculated at mean values of relevant variables. Specifically,

$$\varepsilon_{i,h,k} = \frac{\hat{\beta}_{i,h,k} \times (.01 \times \bar{Z}_{h,k})}{\bar{A}_{i,k}}$$

where,

$\varepsilon_{i,h,k}$ = calculated elasticity of the i^{th} aid type for variable h within the k^{th} partition
$\hat{\beta}_{i,h,k}$ = estimated regression coefficient for variable h with respect to the i^{th} aid type within the k^{th} partition
$\bar{Z}_{h,k}$ = mean value of variable h within the k^{th} partition (from Table A-1)
$\bar{A}_{i,k}$ = mean value of the i^{th} type of aid within the k^{th} partition (from Table A-1)

Where regression coefficients are insignificant, no elasticities are computed.

[b] Sub-groups for income and ability variables refer to institution partitions.

TABLE A-5

Elasticities: Percent Change in Student Loan Aid Induced by a One Percent Change in Selected Variables[a]

Variable[b]		Partition			
		TOTAL	INSTITUTION SECTOR		
			Public 4	Public 2	Private 4
AY_k	Total	-.51	-.56	-.57	-.60
	Low-to-Middle	-.32	--	--	-.40
	Upper Middle	-.65	--	--	-.61
Y_k	Total	-1.72	-1.92	-2.10	-1.96
	Low-to-Middle	-1.36	--	--	-1.44
	Upper Middle	-1.99	--	--	-1.87
SAT_k	Total	.18	-.19	.39	--
	Non-Selective	.44	.35	1.36	--
	High Selective	.27	--	NA	-.19
$COST_k$		1.18	1.15	1.89	.61
B_1		.08	.05	--	--

---

[a] Elasticities calculated at mean values of relevant variables. Specifically,

$$\varepsilon_{i,h,k} = \frac{\hat{\beta}_{i,h,k} \times (.01 \times \overline{Z}_{h,k})}{\overline{A}_{i,k}}$$

where,

$\varepsilon_{i,h,k}$ = calculated elasticity of the i^{th} aid type for variable h within the k^{th} partition

$\hat{\beta}_{i,h,k}$ = estimated regression coefficient for variable h with respect to the i^{th} aid type within the k^{th} partition

$\overline{Z}_{h,k}$ = mean value of variable h within the k^{th} partition (from Table A-1)

$\overline{A}_{i,k}$ = mean value of the i^{th} type of aid within the k^{th} partition (from Table A-1)

Where regression coefficients are insignificant, no elasticities are computed.

[b] Sub-groups for income and ability variables refer to institution partitions.

TABLE A-6

Elasticities: Percent Change In Federal Aid Induced by a One Percent Change in Selected Variables[a]

Variable[b]		Partition			
		TOTAL	INSTITUTION SECTOR		
			Public 4	Public 2	Private 4
AY_k	Total	-.60	-.65	-.58	-.64
	Low-to-Middle	-.37	--	--	-.41
	Upper Middle	-.84	--	--	-.89
Y_k	Total	-2.03	-2.21	-2.15	-2.09
	Low-to-Middle	-1.62	--	--	-1.46
	Upper Middle	-2.59	--	--	-2.75
SAT_k	Total	--	--	--	--
	Non-Selective	.30	.14	.30	--
	High Selective	--	.15	NA	--
$COST_k$		.95	.85	1.23	.76
B_1		.10	.12	--	--

---

[a] Elasticities calculated at mean values of relevant variables. Specifically,

$$\epsilon_{i,h,k} = \frac{\hat{\beta}_{i,h,k} \times (.01 \times \bar{Z}_{h,k})}{\bar{A}_{i,k}}$$

where,

$\epsilon_{i,h,k}$ = calculated elasticity of the i^{th} aid type for variable h within the k^{th} partition
$\hat{\beta}_{i,h,k}$ = estimated regression coefficient for variable h with respect to the i^{th} aid type within the k^{th} partition
$\bar{Z}_{h,k}$ = mean value of variable h within the k^{th} partition (from Table A-1)
$\bar{A}_{i,k}$ = mean value of the i^{th} type of aid within the k^{th} partition (from Table A-1)

Where regression coefficients are insignificant, no elasticities are computed.

[b] Sub-groups for income and ability variables refer to institution partitions.

TABLE A-7

Elasticities: Percent Change in EOG Award Induced by a One Percent Change in Selected Variables[a]

Variable[b]		Partition			
		TOTAL	INSTITUTION SECTOR		
			Public 4	Public 2	Private 4
AY_k	Total	-1.08	-1.06	-1.01	-1.16
	Low-to-Middle	--	--	--	--
	Upper Middle	--	--	--	--
Y_k	Total	-3.65	-3.59	-3.73	-3.78
	Low-to-Middle	--	--	--	--
	Upper Middle	--	--	--	--
SAT_k	Total	--	--	--	-.60
	Non-Selective	--	--	--	--
	High Selective	--	--	NA	--
$COST_k$		.91	.90	1.36	.69
B_1		.16	.32	--	--

---

[a] Elasticities calculated at mean values of relevant variables. Specifically,

$$\epsilon_{i,h,k} = \frac{\hat{\beta}_{i,h,k} \times (.01 \times \bar{Z}_{h,k})}{\bar{A}_{i,k}}$$

where,

$\epsilon_{i,h,k}$ = calculated elasticity of the i^{th} aid type for variable h within the k^{th} partition

$\hat{\beta}_{i,h,k}$ = estimated regression coefficient for variable h with respect to the i^{th} aid type within the k^{th} partition

$\bar{Z}_{h,k}$ = mean value of variable h within the k^{th} partition (from Table A-1)

$\bar{A}_{i,k}$ = mean value of the i^{th} type of aid within the k^{th} partition (from Table A-1)

Where regression coefficients are insignificant, no elasticities are computed.

[b] Sub-groups for income and ability variables refer to institution partitions.

TABLE A-8

Elasticities: Percent Change in CW-S Stipend Induced by a One Percent Change in Selected Variables

Variable[b]		Partition			
		TOTAL	INSTITUTION SECTOR		
			Public 4	Public 2	Private 4
AY_k	Total	-.72	-.77	-.52	-.68
	Low-to-Middle	--	--	--	--
	Upper Middle	--	--	--	--
Y_k	Total	-2.43	-2.60	-1.98	-2.21
	Low-to-Middle	--	--	--	--
	Upper Middle	--	--	--	--
SAT_k	Total	.56	--	-.76	-.99
	Non-Selective	-.12	--	--	-.16
	High Selective	-1.06	--	NA	--
$COST_k$		.76	.34	1.45	.46
B_1		.15	.23	--	--

---

[a] Elasticities calculated at mean values of relevant variables. Specifically,

$$\varepsilon_{i,h,k} = \frac{\hat{\beta}_{i,h,k} \times (.01 \times \bar{Z}_{h,k})}{\bar{A}_{i,k}}$$

where,

$\varepsilon_{i,h,k}$ = calculated elasticity of the i^{th} aid type for variable h within the k^{th} partition

$\hat{\beta}_{i,h,k}$ = estimated regression coefficient for variable h with respect to the i^{th} aid type within the k^{th} partition

$\bar{Z}_{h,k}$ = mean value of variable h within the k^{th} partition (from Table A-1)

$\bar{A}_{i,k}$ = mean value of the i^{th} type of aid within the k^{th} partition (from Table A-1)

Where regression coefficients are insignificant, no elasticities are computed.

[b] Sub-groups for income and ability variables refer to institution partitions.

Appendix VI-B

Correlation Matrices

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TABLE B-1

Zero-Order Correlation Matrix - All Freshmen

	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{s1})(SAT_k)$	R_k	X_k	$COST_k$	B_1
AY_k	1.00								
$(D_{yh})(AY_k)$	.50	1.00							
SAT_k	.22	.29	1.00						
$(D_{sh})(SAT_k)$	-.07	.37	.36	1.00					
$(D_{s1})(SAT_1)$	.15	-.05	-.03	-.09	1.00				
R_k	.27	.11	.23	-.00	-.13	1.00			
X_k	.09	.05	.04	.05	-.03	.04	1.00		
$COST_k$	.19	.37	.33	.40	-.06	.04	.04	1.00	
B_1	.02	.16	.11	.24	.00	-.05	.03	.25	1.00

TABLE B-2

Zero-Order Correlation Matrix - Public Four-Year Freshmen

	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_1
AY_k	1.00								
$(D_{yh})(AY_k)$	.49	1.00							
SAT_k	.22	.18	1.00						
$(D_{sh})(SAT_k)$	.08	.20	.21	1.00					
$(D_{sl})(SAT_l)$	-.06	.00	.02	-.08	1.00				
R_k	.30	.10	.30	-.04	-.15	1.00			
X_k	.09	.05	.06	.05	-.00	.06	1.00		
$COST_k$	.15	.20	.15	.18	.03	.05	.09	1.00	
B_1	-.03	.06	-.04	.12	.04	-.09	.06	.08	1.00

TABLE B-3

Zero-Order Correlation Matrix - Public Two-Year Freshmen

	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{s1})(SAT_k)$	R_k	X_k	$COST_k$	B_1
AY_k	1.00								
$(D_{yh})(AY_k)$	.22	1.00							
SAT_k	.06	.07	1.00						
$(D_{sh})(SAT_k)$	NA	NA	NA	NA					
$(D_{s1})(SAT_1)$	.01	-.03	.03	NA	1.00				
R_k	.23	.05	.24	NA	.02	1.00			
X_k	.10	.06	-.01	NA	.01	.00	1.00		
$COST_k$	-.04	.08	.03	NA	-.02	-.02	.08	1.00	
B_1	-.04	-.01	-.08	NA	-.03	-.09	.04	.11	1.00

TABLE B-4

Zero-Order Correlation Matrix - Private Four-Year Freshmen

	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{s1})(SAT_k)$	R_k	X_k	$COST_k$	B_1
AY_k	1.00								
$(D_{yh})(AY_k)$	.67	1.00							
SAT_k	.26	.27	1.00						
$(D_{sh})(SAT_k)$	.20	.40	.50	1.00					
$(D_{s1})(SAT_1)$	-.12	-.14	-.16	-.11	1.00				
R_k	.28	.19	.18	.00	-.30	1.00			
X_k	.11	.11	.14	.09	-.08	.07	1.00		
$COST_k$	.28	.37	.33	.40	-.17	.05	.06	1.00	
B_1	.04	.12	.13	.28	.01	.02	-.02	.15	1.00

Appendix VI-C

Student Aid Distribution Function: Alternate Specifications and Measures

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TABLE C-1

Non-Linear Effects in the Total Aid Distribution Equations[a]
(All coefficients significant at .05 level; standard errors are in parentheses)

EXPLANATORY VARIABLES		DEPENDENT VARIABLE			
		$\Sigma A_{i,k}$ (1.1)	$\Sigma A_{i,k}$ (1.2)	$\Sigma A_{i,k}$ (1.3)	$\Sigma A_{i,k}$ (1.4)
Available Income	AY_k	-.0855 (.0021)		-.0858 (.0021)	.0819 (.0022)
	$(AY_k)^2$		-.0794 (.0022)		
SAT Score	SAT_k	.2788 (.0292)	.2140 (.0296)		.4655 (.0296)
	$(SAT_k)^2$			1.843 (.1820)	
Racial/Ethnic Group	R_k	-216.1 (25.08)	-373.7 (25.01)	-213.6 (24.97)	-240.0 (26.13)
Student Sex	X_k	-52.18 (15.69)	-72.53 (16.00)	-54.44 (15.69)	-51.84 (16.36)
Student Budget	$COST_k$	.2774 (.0070)	.2766 (.0071)	.2760 (.0070)	
	$(COST_k)^2$				.2534 (.0095)
Inst'l Aid Funds	B_1	.2712 (.0256)	.2882 (.0262)	.2651 (.0256)	.3843 (.0264)
Constant		293.0	407.7	385.6	578.6
R^2 F		.30 (664.07)	.27 (468.46)	.30 (666.72)	.24 (486.53)

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[a] All squared terms in $(100)^2$.

Table C-2

Determinants of Total Aid Packaged to 1972-73 Entering Full-Time Freshmen

(underlined coefficients are significant at .05 level; standard errors are in parentheses)

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Realtive Income		Relative SAT Score			Racial/ Ethnic Group	Student Sex	Estimated Need	Inst'l Aid Funds	Constant
	$\frac{Y_k}{Y_s}$	$(D_{yh})(\frac{Y_k}{Y_s})$	$\frac{SAT_k}{SAT_s}$	$(D_{sh})(\frac{SAT_k}{SAT_s})$	$(D_{sl})(\frac{SAT_k}{SAT_s})$	R_k	X_k	Need	B_I	
(2.1) Total Aid	-56.00 (10.22)		-130.8 (20.00)			-254.1 (22.90)	-32.75 (14.85)	.4300 .0075	.2457 (.0240)	262.6
R^2 = .37 F = 917.51										
(2.2) Total Aid	-52.53 (10.26)	-86.79 (11.69)	162.5 (27.97)	176.0 (26.81)	-30.39 (24.39)	-248.3 (23.62)	-35.72 (14.82)	.4222 (.0077)	.2455 (.0245)	251.2
R^2 = .37 F = 624.57										

TABLE C-3

Determinants of Aid Packaged to 1972-73 Entering Full-Time Freshmen: Alternate Cost Measure (Tuition and Fees)

(Underlined coefficients are significant at .05 level; standard errors are in parentheses)

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Tuition and Fees	Inst'l Aid Budget	Con- stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	TF_k	B_I	
(3.1) Total Aid	-.0738	-.0304	.2881	-.1321	.0557	-234.9	-38.24	.4127	.2545	522.3
	(.0023)	(.0031)	(.0303)	(.0252)	(.0448)	(25.42)	(15.73)	(.0114)	(.0261)	
R^2 = .30										
F = 755.28										
(3.2) Grant and Scholarship Aid	-.0400	-.0163	.2790	.1408	-.0889	-226.0	11.58	.2340	.1117	190.0
	(.0016)	(.0022)	(.0212)	(.0177)	(.0314)	(17.80)	(11.01)	(.0079)	(.0183)	
R^2 = .24										
F = 330.05										

(continued)

TABLE C-3, concluded

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Tuition and Fees	Inst'l Aid Budget	Con- stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{s1})(SAT_k)$	R_k	X_k	TF_k	B_1	
(3.3) Term-Time Work Aid $R^2 = .04$ $F = 42.52$	-.0030 (.0008)	-.0035 (.0010)	-.0311 (.0104)	-.0121 (.0086)	.0116 (.0153)	-28.54 (8.688)	-4.983 (5.377)	.0130 (.0039)	.0571 (.0089)	174.9
(3.4) Student Loan Aid $R^2 = .12$ $F = 141.84$	-.0220 (.0014)	-.0082 (.0018)	.0482 (.0176)	.0108 (.0147)	.1169 (.0261)	-2.372 (14.78)	-41.68 (9.146)	.1605 (.0066)	.0898 (.0152)	118.5

TABLE C-4

Determinants of Aid Packaged to 1972-73 Entering Full-time Freshmen: Alternate Institutional Aid Funds Measure (Initial Year EOG Funds)

(Underlined coefficients are significant at .05 level; standard errors are in parentheses)

	DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
		Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Initial Year EOG Funds	Con- stant
		AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_2	
(4.1)	**Total Aid**	-.0759 (.0023)	-.0309 (.0031)	.2664 (.0303)	.2130 (.0245)	.0722 (.0447)	-210.8 (25.33)	-53.38 (15.66)	.2959 (.0072)	.5609 (.0987)	272.7
	R^2 = .30 F = 452.72										
(4.2)	**Grant and Scholarship Aid**	-.0411 (.0016)	-.0159 (.0022)	.2724 (.0214)	.1898 (.0173)	-.0789 (.0315)	-214.9 (17.87)	3.314 (11.05)	.1563 (.0051)	.1483 (.0700)	66.10
	R^2 = .24 F = 321.16										

(continued)

TABLE C-4, concluded

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	Initial Year EOG Funds	Con- stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{s1})(SAT_k)$	R_k	X_k	$COST_k$	B_2	
(4.3) Term-Time Work Aid R^2 = .04 F = 48.45	-.0092 (.0008)	-.0042 (.0010)	-.0381 (.0104)	-.0110 (.0084)	.0122 (.0153)	26.19 (8.673)	-5.548 (5.360)	.0223 (.0025)	.1904 (.0388)	149.4
(4.4) Student Loan Aid R^2 = .12 F = 140.62	-.0228 (.0014)	-.0080 (.0018)	.0437 (.0177)	.0448 (.0143)	.1217 (.0261)	7.221 (14.80)	-47.73 (9.147)	.1100 (.0042)	.2400 (.0577)	26.35

TABLE C-5

Determinants of Aid Packaged to 1972-73 Entering Full-Time Freshmen: Alternate Institutional Aid Funds Measure (CW-S Aid Funds)

(Underlined coefficients are significant at .05 level; standard errors are in parentheses)

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	CW-S Aid Funds	Con- stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_1	
(5.1) Total Aid	-.0759 (.0023)	-.0309 (.0031)	.2680 (.0303)	.2118 (.0245)	.0653 (.0448)	-210.8 (25.33)	-53.70 (15.66)	.2963 (.0072)	.1267 (.0220)	271.9
R^2 = .30 F = 452.85										
(5.2) Term-Time Work Aid	-.0092 (.0008)	-.0042 (.0010)	-.0374 (.0104)	-.0114 (.0084)	.0095 (.0153)	-26.01 (8.670)	-5.708 (5.359)	.0224 (.0025)	.0455 (.0075)	148.7
R^2 = .04 F = 69.60										

TABLE C-6

Determinants of Aid Packaged to 1972-73 Entering Full-Time Freshmen: Alternate Institutional Aid Funds Measure (NDSL Aid Funds)

(Underlined coefficients are significant at .05 level; standard errors are in parentheses)

DEPENDENT VARIABLE	EXPLANATORY VARIABLES									
	Available Income		SAT Score			Racial/ Ethnic Group	Sex	Student Budget	NDSL Aid Funds	Con- stant
	AY_k	$(D_{yh})(AY_k)$	SAT_k	$(D_{sh})(SAT_k)$	$(D_{sl})(SAT_k)$	R_k	X_k	$COST_k$	B_4	
(6.1) Total Aid	-.0757	-.0310	.2623	.2094	.0681	-207.2	-53.57	.2924	.2397	272.7
	(.0023)	(.0031)	(.0302)	(.0245)	(.0446)	(25.29)	(15.62)	(.0073)	(.0296)	
R^2 = .30 F = 458.04										
(6.2) Student Loan Aid	-.0227	-.0081	.0421	.0432	.1195	9.061	-47.87	.1084	.1089	
	(.0014)	(.0018)	(.0177)	(.1432)	(.0261)	(14.78)	(9.135)	(.0042)	(.0173)	
R^2 = .12 F = 143.44										

PART B

THE IMPACT OF STUDENT AID ON FAMILY DECISION MAKING

CHAPTER VII

ALTERING FAMILY EDUCATIONAL SPENDING PATTERNS: The Effects of Student Aid

A growing body of research has provided evidence that student financial aid can affect the enrollment behavior of students and their families (see Radner and Miller [1975]; Miller [1971]; Bishop [1971]; Kohn, Manski, and Mundel [1974]; Barnes, Erickson, Hill, and Winokur [1972]; Carlson [1974]). Nevertheless, researchers still know very little about how financial aid affects the total family investment and the amount of parental resources that are provided for educational expenses. A framework for analyzing family spending behavior is presented in this chapter. From this framework, hypotheses about the affects of financial aid on the separate investments of students and parents can be inferred.

A. An Overview

A human capital investment formulation can be used to develop the key determinants of family investment in postsecondary education. From this more basic model, the question of whether the amount or type of financial aid award will provide an encouragement for increased parental support for educational expenses can be addressed.

In the conceptual framework used in this study, instructional services purchased at postsecondary institutions and student time are used to produce educational capital -- a human asset that can generate future wage and non-money returns. Production and investment are carried forth until the perceived value of these benefits just equals tuition and fees expenditure plus forgone earnings costs. But, in the shorter period of one year, the constraints of available time and financial resources can limit the enrollment in and expenditures for postsecondary education.

B. The Household Framework

Although similar in many respects to other family investment and consumption alternatives, the option of investing in postsecondary education has three distinguishing features: the annual investment ceiling; student and parental returns from the enrollment; and "categorical" student aid funds.

Annual investment ceiling. Total investment costs include tuition and fees plus student earnings foregone (or non-tuition costs, whichever are larger). Constraints on academic course loads and available student time impose an upper bound on the level of investment in any one year. Should the student and family perceive sizeable future returns, the constraints in the short run would permit only partial attainment of the longer run desired level of investment.

Student and parent returns. While many of the private returns from investment in postsecondary education are realized by the student, the parents can perceive current enjoyment from observing and participating in the postsecondary activities of their children. In this respect, the enrollment takes on the characteristics of a public good: The consumption (investment) of the student simultaneously yields satisfaction to the parents quite apart from the calculated appraisal of investment costs and future money and non-money returns. This suggests that, with short run limitations on investment, parent and student returns can exceed the investment costs at the margin,

"Categorical" student aid funds. Students attending postsecondary institutions are eligible for student aid awards up to the documented costs of attendance. But, since the receipt of these funds is contingent upon enrollment, the resulting lower "net" price will operate to encourage spending for postsecondary education. Furthermore, since the award criteria differ by student type, program type, and institution type, the net "prices" will differ among the many postsecondary educational options.

Beyond these features, the basic model for analyzing family investment or education expenditures has been developed most recently by McMahon [1974a], [1974b], and Wagner [1977]. For the most part, the constraints on family investment identified in these studies also operate to limit the separate investments of the parents and student. Similarly, most of the family characteristics associated with the perceived returns in the family model can be hypothesized to influence the separate evaluations of the parents and students. In general, three factors are presumed to affect the household's decision to spend on postsecondary education: (1) the perceived returns from the investment in postsecondary education; (2) the student's ability to acquire skills, or "produce" educational capital, while in school; and (3) the short run constraints on the household's budget. These factors are discussed in turn below.

1. Returns from Investment in Postsecondary Education

Generally, the returns from investment in postsecondary education take two forms. First, more highly trained individuals tend to receive higher wages and to incur fewer and shorter periods of involuntary unemployment. Thus, there is a direct monetary payoff to the investment (Blaug [1970], Psacharopoulos [1973]). Second, individuals with higher educational attainment tend to be more efficient consumers and to provide better instruction for their pre-school children (see Michael [1972] and Liebowitz [1975]). Both these monetary and non-money returns are primarily realized by the student and might be perceived differently by different types of students and their families. In particular, the perceived value of the potential future returns from investment in postsecondary education are hypothesized to be affected by parental tastes for postsecondary education, transmitted to the student, as given by the attainment of the parents (ED_k). Differences in student achievement, motivation, and ability (SAT_k) might also reflect differences in student perceptions about future returns from postsecondary training. If the student or parents perceive future labor market discrimination or the effects of "affirmative action," the student's race (R_k) and sex (X_k) might also lead to differences in the implicit discounting of future returns.

In the main, the level of parental spending is hypothesized to be influenced by these same factors. It is reasonable to assume, particularly for the entering freshman, that the family -- parents and student -- make the expenditure and enrollment decisions. In this context, the perceptions of the head of the household, taking into consideration the aspirations and abilities of the student family member, will guide the level of investment in postsecondary education. Hence, the factors influencing the parental evaluation of the potential returns from the investment will affect the amount of family and parental spending.

Moreover, the parents might anticipate current consumption satisfactions from the postsecondary education experiences of their children. To the extent the student's enrollment enables the vicarious reliving of the parent's own earlier college experiences, parental spending may increase. Further, if the parents are aware of the enrollment decisions made by other families, they may choose to spend for postsecondary education in order to emulate the consumption and investment patterns of their peers (the "demonstration" effect described by Deusenberry [1949]).

In any event, the foregoing implies that the educational capital stocks of the children must be included as an argument in the multiperiod utility function of the parents. Generally, this can be shown as:

$$(1) \quad U_{pT} = \quad (S_{set}, q_{jt}, ED_k, SAT_k, X_k, R_k, Y_c, e_1) \qquad \begin{array}{l} j = 1, \ldots, m \\ t = T, \ldots, L \end{array}$$

where

S_{set} = student stocks of educational capital

q_{jt} = all purchased goods and services, excluding instructional services

ED_k = parental stocks of educational capital, reflecting parental tastes and habits for postsecondary education

SAT_k = student's achievement/ability

X_k = race of student

R_k = sex of student

Y_c = median community income

e_1 = random disturbance

The family (parents and student) attempt to maximize the returns from all activities over the life cycle, subject to available resources. The dynamic resource constraint includes both parents' disposable income ($Y_{k,t}$) and student's disposable income ($Y_{s,t}$) in future years. In general, the marginal contribution of current investment in postsecondary education to parental satisfaction (evaluated in dollars) can be given by:

$$(2) \qquad MU_{pT} = \sum_{t=T}^{L} \frac{\partial U_{pt}}{\partial S_{set}} \cdot \frac{\partial S_{set}}{\partial Q_{et}} \cdot \frac{1}{\lambda} \cdot \frac{1}{(1+r)}{}^{t-T} +$$

$$\sum_{t=T}^{L} \frac{\partial Y_{s,t}}{\partial S_{set}} \cdot \frac{\partial S_{set}}{\partial Q_{et}} \cdot \frac{1}{(1+r)^{t-T}}$$

in which λ represents the marginal utility of income and

Q_{et} = gross additions to the student's stock of skills and knowledge (i.e., educational capital)

r = a rate of discount, incorporating both time preference for consumption and risk or uncertainty presumed to differ by student sex (X_k) and race (R_k).

It is these direct non-money returns (first term), combined with the perceived monetary returns (second term), which are compared to the investment costs (developed below) to determine the level of parental spending for educational expenses.

2. Production of Educational Capital

Students are presumed to augment their stocks of skills and knowledge while engaged in formal schooling. This educational capital stock can be used to obtain money and non-money returns in later life, as described above.

In general, the student combines his/her own time (s_{st}) plus the instructional services (q_{et}) of postsecondary institutions to acquire skills and knowledge ("produce" additions to the educational capital stock). This production relationship is represented in equation (3).

$$(3) \qquad Q_{et} = f(s_{st}, q_{et}; ED_k, SAT_k)$$

where

Q_{et} = gross additions to the student's stock of skills and knowledge (educational capital)

s_{st} = student time devoted to study

q_{et} = instructional services (i.e., instruction, lab, library, etc.) purchased from postsecondary institutions

ED_k = parental knowledge about postsecondary education alternatives (as measured by educational attainment of the head).

SAT_k = student achievement/ability

Parental education and student achievement/ability are included in the production function as measures of the efficiency with which student time and instructional services are used: some students may employ these "inputs" better than their peers. For example, students whose parents have had more educational experience (as measured by ED_k) are more likely to be directed to the most "appropriate" postsecondary option. Further, students with greater measured achievement, motivation, and ability (SAT_k) might be more able to absorb, and benefit from, a fixed amount of postsecondary training.

3. Household Resource Constraints

In the short run, both limited student time and finances pose formidable constraints on investment.

The time constraint, described by the actual number of hours available to the student for study, places an upper bound on investment. Time is constrained for two reasons. First, institutions might impose requirements which award one academic year of credit for one year's work.[1] Second, the assimilation of knowledge and skills is time-consuming. Even for the most able students, there are physical limitations on the speed with which new knowledge can be absorbed.

Just as important for both parental and student investments are family characteristics which affect the capacity of the family to contribute toward educational expenses in the short run, such as disposable family income ($Y_{k,T}$) and family size (N_k). External sources of funds, including grant aid, student loan proceeds, and student job earnings, can ease the financing burden within the household.

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[1] The growing number of time-shortened degree programs and college level examination programs (such as CEEB's CLEP) is evidence of a recognition of these limitations.

Simply put, all spending in the current time period must be funded by the available resources. Ignoring assets, this can be shown as:[1]

$$(4) \qquad Y_T = \sum_j p_{jT} q_{jT} + (P_{eT} - \sum_i A_{i,k,T}) Q_{eT}$$

In equation (4), family disposable income limits the expenditures on all goods and services, including those made on behalf of the student enrollment. Student aid can ease this constraint by reducing the shadow price (P_{eT}) of the investment in postsecondary education.

C. The Parent's Contribution

In theory, the parents will contribute toward the educational expenses of the student commensurate with their perceived returns. This is analytically equivalent to assuming that the parents will attempt to maximize their returns from the investment subject to the production, student time, family budget, and investment cost constraints. That is, form the Lagrangian:

$$\begin{aligned}(5) \quad L = \; & U_{pt}(S_{set}, q_{jt}, ED_k, SAT_k, X_k, R_k, Y_c, e_1) \\ & + \lambda_0 (Y_{k,T} - \sum p_{jT} q_{jT} - (P_{eT} - \sum_i A_{i,k,T}) Q_{eT})\end{aligned}$$

---

[1] The total family resource constraint is simplified here in two ways. First, while income from family assets can be included in disposable income, equation (3) does not reflect the family's ability to use the proceeds from liquidated assets for the purchase of goods and services. Second, although the family and student use part of their time for consumption, only work (in $Y_{k,T}$ and student part-time work ($A_{i,k,T}$)) and study (in the shadow price of educational capital) time are accounted for in equation (4).

Setting the partial derivatives in equation (5) to zero (as a necessary first order condition), the hypotheses about the influences on parental contributions described above can be derived (see Appendix VII-A).

This formulation presumes that the parents determine the equilibrium level of investment or expenditure, taking into consideration the amount of external support from grants as well as the amount of available student resources from a student loan, student savings, or a term-time job. Since financial aid is awarded only after some sort of application process, it is reasonable to assume that the amount of parental contribution is determined after the amounts of awarded financial aid.

Further, since an upper bound on total annual investment can be reached, the effect of financial aid on family and parental investment is ambiguous: in part, such aid can substitute for private household resources. On the other hand, student aid might encourage enrollment and/or increased family and parent spending. This "threshold" hypothesis can be stated succinctly:

> Does the amount or type of student financial aid provide a "threshold" level of support for some students which encourages greater parental outlays for educational expenses?

The determination of the levels of parental and student investment is further clouded because the enrollment simultaneously provides current and perceived returns to the student and parents. In one formulation, greater levels of current parental satisfactions (as measured by parental tastes or relative income) might be hypothesized to lead to increased parental support (substituting for student investment).

In both cases, the actual effects are essentially an empirical matter. Controlling for the key determinants of parental and family investment in postsecondary education (described in section B above), the effects of financial aid on the parents' contribution can be estimated. A parents' contribution function can be deduced of the general form (see Appendix VII-A).

(6) $PC_{k,T} = f(A_{i,k,T}, Y_{k,T}, Y_c, N_k, SAT_k, ED_k, X_k, R_k, z_1, \ldots, z_j)$

where

$PC_{k,T}$ = actual parental contribution for the k^{th} type of student
$A_{i,k,T}$ = i^{th} type of financial aid offer to the k^{th} type of student
$Y_{k,T}$ = disposable family income, excluding student earnings
Y_c = median income in community
N_k = family size
SAT_k = student's SAT score, or other ability measure
ED_k = parental educational attainment (of head)
X_k = sex of student
R_k = race of student
$z_1, \ldots, z_j$ = all variables not tested and random disturbance

The parents' support for the educational costs of their children, then, is hypothesized to depend upon their perception of the future income and current and future non-money benefits from the investment.

Further, the amount of the parent's support will be influenced by their evaluation of the student's ability to acquire skills from postsecondary training. But, as important as the parental perceptions and evaluations, student financial aid can also affect the level of parental support for student educational expenses.

Appendix VII-A

Parental Contribution: Derivation of Effects

A. The Analytical Framework[a]

Let the parent's utility function be shown as:

$$(A.1)\quad U_{pt} = U(S_{set}, q_{jt}, ED_k, X_k, R_k, Y_c, e_1)$$

where

S_{set} = the student's stock of educational capital, Q_{et} of which is produced in any given year

q_{jt} = purchased goods and services, excluding expenditures for postsecondary education

ED_k = the parent's stock of educational capital, reflecting parental tastes for postsecondary education

X_k = sex of student

R_k = race of student

Y_c = median income in community

e_1 = random disturbance

Let t be an index for all (any) future years and T refer to the current year. Over the life cycle, all family activities are constrained by available time and financial resources. Ignoring consumption time,

$$(A.2)\quad \sum_t \frac{Y_{k,t}}{(1+r)^{t-T}} + \sum_t \frac{Y_{s,t}}{(1+r)^{t-T}} + \sum_h p_{hT} S_{hT-1} =$$

$$\sum_t \sum_j \frac{p_{jt} q_{jt}}{(1+r)^{t-T}} + \sum_t \frac{(P_{et} - \sum_i A_{i,k,t}) Q_{et}}{(1+r)^{t-T}} + \sum_h \frac{p_{hL} S_{hL}}{(1+r)^{L-T}}$$

in which

$Y_{k,t}$ = family disposable income at time t, excluding the earnings of offspring

$Y_{s,t}$ = student's disposable income at time t, excluding earnings while in school

---

[a] This derivation draws upon the model developed in Wagner (1977).

$\sum_h p_{ht}S_{ht-1}$ = value of the stock of h types of family assets (S_{ht-1}) at the beginning of the current period

$\sum_j p_{jt}q_{jt}$ = purchased goods and services at time t, excluding expenditures for postsecondary education

P_{et} = shadow price of educational capital at time t

$\sum_i A_{i,k,t}$ = the dollar sum of all awarded student financial aid from grant, work, and loans

$\sum_h p_{hL}S_{hL}$ = value of the stock of h types of family assets (S_{hL}) at the end of the planning horizon or life cycle

r = an implicit rate of discount incorporating both time preference for consupmtion and uncertainly. Presumed to vary by student sex (X_k) and race (R_k).

In a year, the student member can augment his/her stock of skills and knowledge by combining study time (s_{sT}) with instructional services purchased from postsecondary institutions (q_{eT}) in a production process described by equation (A.3). Students are presumed to differ in the efficiency with which the inputs are utilized, according to student achievement ability (SAT_k) and parental knowledge of postsecondary educational options (ED_k).

(A.3) $$Q_{eT} = (s_{sT}, q_{eT}; SAT_k, ED_k, e_2)$$

All variables in equation (2) have been defined above, except

Q_{eT} = gross additions to the student's stock of skills and knowledge (educational capital)

e_2 = random disturbance

By definition,

(A.3a) $$Q_{eT} = S_{seT} - S_{seT-1}$$

Production of educational capital is undertaken subject to a cost constraint:

$$P_{eT}Q_{eT} = w_T s_{sT} + p_{eT}q_{eT} \tag{A.4}$$

in which

P_{eT} = the shadow price of educational capital (reduced with student aid)

$w_T s_{sT}$ = earnings foregone while in school

$p_{eT}q_{eT}$ = stated tuition and fees

Total family spending is constrained in the short run by available resources. Generally, purchases of goods and services plus expenditures for postsecondary education cannot exceed family disposable income. The more detailed budget constraint can be expressed as:

$$Y_{k,T} + \sum_h p_{hT}S_{hT-1} = \sum_j p_{jT}q_{jT} + (P_{eT} - \sum_i A_{i,k,T})\, Q_{eT} + \sum_h p_{hT}S_{hT} \tag{A.5}$$

in which all variables have been defined above.

The determinants of the parental contribution can be deduced when the parents utility function is maximized subject to the cost and production contraints. More formally, form the Lagrangian:

$$\begin{aligned} L = \;& u\,(S_{set},\, q_{,t},\, ED_k,\, X_k,\, R_k,\, Y_c,\, e_1) + \\ & \lambda_1\Big(\sum_t \frac{Y_{k,t}}{(1+r)^{t-T}} + \sum_t \frac{Y_{s,t}}{(1+r)^{t-T}} + \sum_h p_{hT}S_{hT-1} - \sum_t \sum_j \frac{p_{jt}q_{jt}}{(1+r)^{t-T}} - \\ & \sum_t \frac{(P_{et} - \sum_i A_{i,k,t})Q_{et}}{(1+r)^{t-T}} - \sum_h \frac{p_{hL}S_{hL}}{(1+r)^{L-T}}\Big) + \\ & \lambda_2(Y_{k,T} + \sum_h p_{hT}S_{hT-1} - \sum_j p_{jT}q_{jT} - (P_{eT} - \sum_i A_{i,k,T})Q_{eT} - \sum_h p_{hT}S_{hT}) \end{aligned} \tag{A.6}$$

Setting the partial derivatives of the Lagrangian with respect to each variable in (A.6) equal to zero yields the necessary first order conditions for a maximum.

$$
\begin{aligned}
\text{(A.7)}\quad \frac{\partial L}{\partial Q_{eT}} = {} & \frac{\partial U}{\partial S_{set}} \cdot \frac{\partial S_{set}}{\partial Q_{eT}} + \lambda_1 \sum_t \frac{\partial Y_{s,t}}{\partial S_{set}} \cdot \frac{\partial S_{set}}{\partial Q_{eT}} \cdot \frac{1}{(1+r)^{t-T}} \\
& - \lambda_1 (P_{eT} - A_{i,k,T}) \\
& - \lambda_1 \sum_t \frac{\partial P_{et}}{\partial S_{set}} \cdot \frac{\partial S_{set}}{\partial Q_{eT}} \cdot Q_{eT} \cdot \frac{1}{(1+r)^{t-T}} \\
& - \lambda_2 (P_{eT} - A_{i,k,T}) \\
& = 0
\end{aligned}
$$

B. Derivation of Effects

Collecting terms in (A.7), the direct effect of financial aid on parental investment can be seen in equation (A.7a). Here, the familiar equilibrium relationship is described: perceived utility and monetary returns (evaluated in dollars) must equal the discounted net costs of the investment at the margin.

$$
\begin{aligned}
\text{(A.7a)}\quad & \frac{\partial U}{\partial S_{set}} \cdot \frac{\partial S_{set}}{\partial Q_{eT}} \cdot \frac{1}{\lambda_1} + \sum_t \frac{\partial Y_{s,t}}{\partial S_{set}} \cdot \frac{\partial S_{set}}{\partial Q_{eT}} \cdot \frac{1}{(1+r)^{t-T}} \\
= {} & \left(\frac{\lambda_1 + \lambda_2}{\lambda_1}\right)(P_{eT} - \sum_i A_{i,k,T}) + \sum_{t=T+1} (P_{et} - \sum_i A_{i,k,t}) \frac{1}{(1+r)^{t-T}} \\
& + \sum_t \left(\frac{\partial P_{et}}{\partial S_{set}} \cdot \frac{\partial S_{set}}{\partial Q_{eT}} \cdot Q_{eT} \cdot \frac{1}{(1+r)^{t-T}}\right)
\end{aligned}
$$

Note, in particular, that any increase in student aid ($A_{i,k,T}$) reduces marginal cost relative to the perceived marginal returns. Hence, greater investment is encouraged.

There are, however, two aspects of the investment in postsecondary education which may work in the opposite direction. First, annual family spending for postsecondary education is limited by an upper bound. Second, different forms of financial aid might adversely affect the level of investment. The extent to which these factors come into play is essentially an empirical matter.

Upper Bound on Costs. Total family investment in any one year consists of outlays on tuition and fees plus student foregone earnings (or total non-tuition expenditures, whichever are greater). Due to institutional limitations on academic course loads, the total tuition outlays are constrained. Similarly, over a one year period, student foregone earnings, or non-tuition education expenditures nave an upper bound. This limitation can be observed in the evaluation of marginal costs in equation (A.7a). For relatively high income families, λ_2 would approach zero (the short run budget constraint would not be binding). For financial aid recipients, the net cost to the parents might be quite low. In either instance, the perceived returns can exceed net costs at the margin. On the other side of equation (A.7a), the perceived marginal returns may greatly exceed the marginal net investment costs.

Indirect Effects of Student Aid. While grant aid represents a costless form of student aid, both student loans and term time work require a commitment of future repayment or current labor in return for the aid. In the short run, the labor requirement in term time work draws student time away from study and leisure activities. At some level of work, the "income" effect of increased available dollars in the current period may be balanced off by the constraint on available student time for study.

CHAPTER VIII

INFLUENCES ON THE PARENTAL CONTRIBUTION: SOME INFERENCES ABOUT FAMILY BEHAVIOR

The steep increase in college costs coupled with the slow and uneven pace of economic recovery have focused attention on the capacity of families to meet educational expenses. By enlarging this capacity, financial aid offers the principle short-run tool for encouraging parents and students to undertake the out-of-pocket investment in postsecondary education.

Utilizing the concepts of household investment behavior developed in Chapter VII, we examine below the effects of student aid on parental spending to meet the educational expenses of student family members. In section A, the family investment variables and the attributes deduced to influence family spending behavior are measured. A brief descriptive view of the patterns of parental and student direct investments is presented in section B. Section C contains the results of the empirical tests of the hypotheses developed in the preceding Chapter.

A. Measurement of the Variables

The analyses provided below are based on information collected in the 1972 National Longitudinal Study Base-Year and First Follow-Up surveys. The construction of each variable is detailed in an appendix to this report. As noted earlier, a series of computer manipulations were used to adjust for non-response and reporting errors in the financial aid data. Only cases with the "edited" student aid data or non-missing family and institutional data are employed in the analyses.

Parental Contribution: PC_k. NLS respondents provided an estimate of parental support in question 47 of the First Follow-Up survey. The reported amount was increased by an estimated $80 per month for commuter students who did not include in-kind room and board costs in their accounting of direct expenditures.

Available Income: AY_k A measure of the financial capacity of parents to spend for postsecondary education, available income is estimated for each student. The calculated amount, based on procedures adopted by the College Scholarship Service (College Scholarship Service (1971)), incorporates such factors as family income, assets, family size, other dependents, and number of children in college. All but a measure of assets are available in the NLS; the calculations impute $1,000 of assets for each $1,000 in family income. A regional/city size cost of living index (from Lurie (1975)) is applied to each expected contribution to account for cost of living differences from place to place.

Student Contribution: SC_k. Any direct expenses not met with grant or scholarship aid, transfer income benefits, or parental contributions must be paid out of student resources. The student contribution, therefore, includes the amount drawn on savings accounts plus proceeds from a term-time job or student loan. The latter types of student aid are included as part of the student contribution since they require a commitment of labor or repayment in return for the aid.

Parental Education: ED_k. Hypothesized to reflect parental tastes for postsecondary education and/or parental knowledge about postsecondary training alternatives, parental education is taken to be the formal educational attainment in years of the male parent or guardian (as recorded in the First Follow-Up item 78). Where no information on the educational attainment of the male parent is available, the years of schooling of the female parent or guardian are employed.

Median Community Income: Yc. Parents and/or families may spend more for postsecondary education if they observe others in the community making these expenditures. Further, in communities where a large share of the college-age group continues on to postsecondary education, information about post high school training might be more readily provided. These "demonstration" and "external information" influences are measured here by the median family income in the community. We infer from available data that college-going rates are higher and college prep programs in high schools more common in communities with relatively greater family incomes. A measure of the median family income in the community (Westat (1972)) was used to stratify the Base-Year sample selection. The midpoint of each of ten income intervals is taken to be an approximate point estimate of the median family income in the community.

All other variables have been defined earlier (in Chapter IV).

B. The Pattern of Parental Contributions

As suggested in the preceding chapter, several family and institutional attributes can influence the level of support provided by the parents. The family attributes include family income, racial/ethnic identity, student academic aptitude, and student sex. Institution-specific costs of attendance and the amount of composition of the financial aid package can also influence parental contributions.

1. Differences in Parental Support Among Key Student Subpopulations

The level of parental support appears to have differed systematically across partitioned student groups. In particular, low income, minority, and male students evidenced a slightly smaller amount of parental support than did their peers. Students within these groups tended to receive larger amounts of financial aid, although the aid did not appear to fully substitute for parental support.

The average amounts of parental and student contributions within each income quartile is shown in Table VIII-1. Not surprisingly, the level of parental support increased across family income quartiles, from $566 to $1,689. This increase represented a doubling of the share of out-of-pocket education expenses borne by the parents. However, while grant and transfer support to low income students averaged almost four times the amount reported by high income students, the main effect of all aid to low income students was to shift the burden of educational expenses to the student. Here, the student contribution of more than $700 met 40 percent of educational expenses. Full-time freshmen from high income families paid for 22 percent of the educational expenses with an average $540.

As evidenced in Table VIII-2, the share of educational expenses met by parental contributions was comparable across student achievement/ability groups. Since higher ability students enrolled at higher cost institutions, the difference in parental contributions between low and high ability groups ($887 vs. $1,473) was offset by the difference in average costs of attendance ($1,720 vs. $2,711). Even though the absolute level of student support was more nearly equal across ability groups, the larger amount of grant and transfer aid reported by high ability students ($494 or 18 percent) appears to be associated with a lower relative student contribution (28 percent vs. 35 percent for low ability students).

The patterns of sources of support among racial/ethnic groups are shown in Table VIII-3. The average $1,149 parental contribution among white students was nearly twice as great as the level of parental support for black students.

TABLE VIII-1

Parental and Student Contributions for Postsecondary Education by Family Income

(1972-73 NLS entering full-time freshmen)

Family Income Quartile[a]	Dollars ---	Share of Cost ---
LOW		
Gross Cost	$1,844	(100%)
Grant and Transfer	547	(30%)
Parents' Contribution	566	(31%)
Student Term-Time Work	148	(8%)
Student Loan	257	(14%)
Student Savings	326	(18%)
LOWER MIDDLE		
Gross Cost	$1,911	(100%)
Grant and Transfer	361	(19%)
Parents' Contribution	777	(41%)
Student Term-Time Work	107	(6%)
Student Loan	236	(12%)
Student Savings	430	(22%)
UPPER MIDDLE		
Gross Cost	$1,970	(100%)
Grant and Transfer	263	(13%)
Parents' Contribution	988	(50%)
Student Term-Time Work	96	(5%)
Student Loan	201	(10%)
Student Savings	422	(21%)
HIGH		
Gross Cost	$2,396	(100%)
Grant and Transfer	168	(7%)
Parents' Contribution	1,689	(70%)
Student Term-Time Work	60	(2%)
Student Loan	93	(4%)
Student Savings	386	(16%)

---

[a] Income quartiles calculated from student-reported income interval estimates: Low = less than $7,500; Lower Middle = $7,500 to $10,500; Upper Middle = $10,500 to $15,000; High = over $15,000. Distributions exclude students for whom no income estimate is available (approximately 18%).

TABLE VIII-2

Parental and Student Contributions for Postsecondary Education by Student Achievement/Ability Score (SAT)

(1972-73 NLS entering full-time freshmen)

Student Achievement/Ability Group[a]	Dollars	Share of Cost
	---	---
LOW		
Gross Cost	$1,720	(100%)
Grants and Transfer	222	(13%)
Parents' Contribution	887	(52%)
Student Term-Time Work	109	(6%)
Student Loan	145	(8%)
Student Savings	357	(21%)
LOWER MIDDLE		
Gross Cost	$2,067	(100%)
Grants and Transfer	275	(14%)
Parents' Contribution	1,125	(54%)
Student Term-Time Work	80	(4%)
Student Loan	210	(10%)
Student Savings	377	(18%)
UPPER MIDDLE		
Gross Cost	$2,241	(100%)
Grants and Transfer	318	(14%)
Parents' Contribution	1,249	(56%)
Student Term-Time Work	84	(4%)
Student Loan	189	(8%)
Student Savings	401	(18%)
HIGH		
Gross Cost	$2,711	(100%)
Grants and Transfer	494	(18%)
Parents' Contribution	1,473	(54%)
Student Term-Time Work	80	(3%)
Student Loan	205	(8%)
Student Savings	459	(17%)

---

[a] Students are grouped according to SAT-equivalent scores: Low = less than 800; Lower Middle = 800 to 950; Upper Middle = 950 to 1,100; High = over 1,100. Distributions exclude students from whom no SAT-equivalent score is available (approximately 2%).

TABLE VIII-3

Parental and Student Contributions for Postsecondary Education by Racial/Ethnic Group

(1972-73 NLS entering full-time freshmen)

Racial/Ethnic Group[a]	Dollars	Share of Cost
WHITE		
Gross Cost	$2,078	(100%)
Grant and Transfer	274	(13%)
Parents' Contribution	1,149	(55%)
Student Term-Time Work	87	(5%)
Student Loan	171	(8%)
Student Savings	397	(19%)
BLACK		
Gross Cost	$1,858	(100%)
Grant and Transfer	491	(25%)
Parents' Contribution	665	(38%)
Student Term-Time Work	163	(9%)
Student Loan	270	(14%)
Student Savings	269	(14%)
HISPANIC		
Gross Cost	$1,531	(100%)
Grant and Transfer	424	(28%)
Parents' Contribution	610	(40%)
Student Term-Time Work	93	(6%)
Student Loan	192	(12%)
Student Savings	212	(14%)
OTHER		
Gross Cost	$2,097	(100%)
Grant and Transfer	431	(21%)
Parents' Contribution	1,011	(48%)
Student Term-Time Work	146	(7%)
Student Loan	153	(7%)
Student Savings	356	(17%)

---

[a] Students are grouped according to self-identified racial/ethnic category. Other category includes American Indian and Asian-American students. Distributions exclude students for whom no racial/ethnic identification is available (approximately 2%).

But, as with low income students, the greater amounts of financial aid to black students appears to be associated with larger student contributions. Black students covered nearly 37 percent of educational costs compared to a 32 percent share for the student contributions among whites. For the other minority groups, the student contributions met nearly 32 percent of costs, the same share borne by white students. The increased grant aid to these groups of students, however, apparently just offset parental support.

Differences in the patterns of support between male and female full-time freshmen appeared to be small. From Table VIII-4, females received about $100 more, on average, from their parents. It may well be that this increased parental support was necessary to compensate for lower levels of savings from a summer job._/

2. Parental Contributions and Student Aid: A Descriptive View

The comparisons just presented camouflage the effects of student aid on parental spending for educational expenses. As described in Chapter IV, the receipt of aid, in different amounts and kinds, varies according to several student/family and institution attributes. Therefore, it will be helpful to attempt to describe in a simple way the relationship between parental contributions and student assistance.

Student financial aid can affect both the level and composition of family spending for postsecondary education. In the first instance, student aid can encourage greater total spending (from family resources plus student aid). This "price" effect would occur because student aid

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_/Need analysis systems typically require less from summer savings for female dependent students. Although this treatment would reduce the expected family contribution for females, parents might still have to make up the difference if adequate amounts of financial aid are not forthcoming.

TABLE VIII-4

Parental and Student Contributions for Postsecondary Education by Sex of Student

(1972-73 NLS entering full-time freshmen)

Student Sex	Dollars	Share of Cost
	---	---
MALE		
Gross Cost	$2,061	(100%)
Grant and Transfer	301	(15%)
Parents' Contribution	1,056	(51%)
Student Term-Time Work	94	(5%)
Student Loan	157	(7%)
Student Savings	453	(22%)
FEMALE		
Gross Cost	$2,051	(100%)
Grant and Transfer	294	(14%)
Parents' Contribution	1,147	(56%)
Student Term-Time Work	92	(4%)
Student Loan	197	(10%)
Student Savings	321	(16%)

simultaneously makes the investment more attractive (lower net price) and eases the short-run financing difficulties faced by families. Since fixed limits are imposed on the amount of knowledge that can be absorbed in a given year, it is likely that total spending will not increase by the full amount of the student aid. That is, at least part of the aid will release private resources for non-education uses.[1] This "freed income" effect is measured by the reduction in family spending (parental and/or student) below what would have been privately contributed without student aid.

Student aid can affect the distribution of the burden of direct costs within the family as well. By definition, proceeds from a student loan or term-time job represent a contribution from student resources, since the student incurs a commitment for work or repayment in return for the aid. The use of these sources of support would increase student contributions relative to parental support. That is, there may be a secondary "freed income" effect for the parents, depending on the types and amounts of financial aid received.

We focus here upon the "freed income" effects of student aid for the parents -- the extent to which financial aid frees parental resources for non-education spending. The first two columns in Figure VIII-1 illustrate this effect for the average aided entering full-time freshman. For this student, the parents would have contributed an estimated $1,239 toward educational expenses, if no financial aid was forthcoming. This is shown as the vertical distance of the parents' contribution section within the first column. Now, compare this estimated "no aid" level of parental support to the actual level of the parents' contribution, illustrated in the second column.

---

[1] Where student aid substitutes entirely for family spending, the "price" effect would be zero. See Wagner [1977] for a discussion and some estimates of the "price" effect of grant aid on direct education investment components.

The average aided student actually received \$783, or about \$450 less than we estimated the parents would have contributed in the absence of aid. Indicated by the dashed line, the \$450 difference provides a measure of the "freed income" effect of financial aid for the average aided student.[/] The size of the effect differed, however, among key subpopulations of aided entering full-time freshmen.

In absolute dollars, the receipt of student aid appears to have generated the smallest "freed income" effect among students in the lowest income quartile. As illustrated in Figure VIII-1, about \$200 of parental support

---

[/] Coefficients from two regression equations, fit for unaided students, were employed to estimate the "price" and "freed income" effects. In the first equation, total outlays COA were regressed on available income (AY_k) and student achievement/ability (SAT_k). The parental contribution (PC_k) was regressed on available income (AY_k), student achievement/ability (SAT_k), and total outlays COA in the second equation. The estimated equations are as follows (standard deviations in parentheses):

$$COA = \underset{(.0039)}{.0775\, AY_k} + \underset{(.0498)}{1.112\, SAT_k} + 597.9 \qquad R^2 = .17$$

$$PC_k = .0388\, AY_k + \underset{(.0295)}{.0551\, SAT_k} + \underset{(.0076)}{.8085\, COA} - 315. \qquad R^2 = .74$$

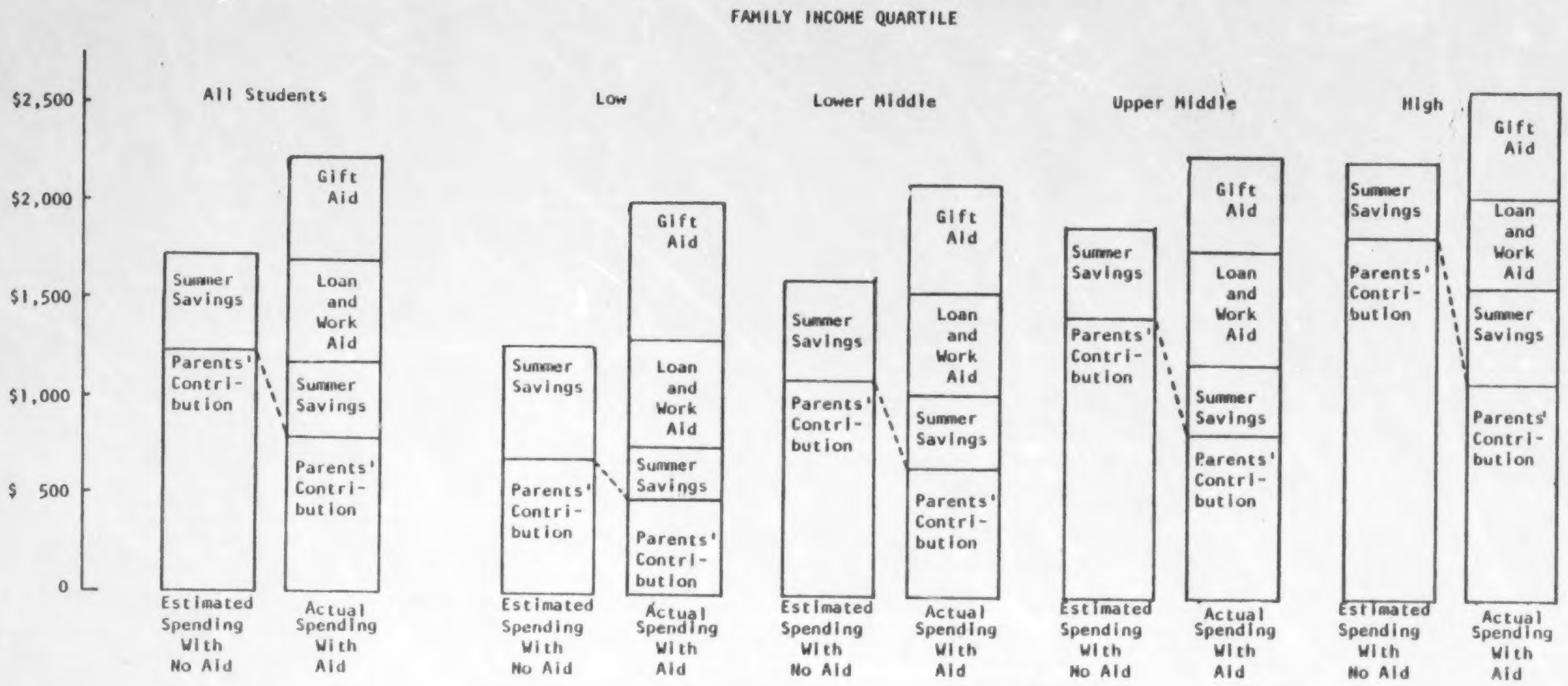
Using the mean values for available income and student achievement/ability score within selected groups of aided students, we first estimated what similar non-aided families would have spent for postsecondary education. The difference between this amount and actual outlays is a measure of the "price" effect.

In a second step, we used the mean values of available income and student achievement/ability score within selected groups of aided students, with the estimated outlays obtained in the first step, to estimate the level of parental support provided in similar non-aided families. The difference between this amount and the actual level of parental support is taken to be a measure of the "freed income" effect.

The approach used here is similar to the one adopted by Hoagland [1977].

Figure VIII-1

The Impact of Financial Aid on Parental Outlays by Family Income Quartiles: "Freed Income" Effects



was released for non-education spending among families with aid recipients in the lowest income quartile compared to an estimated $600 "freed income" effect among high income quartile families. Larger amounts of grant and transfer aid to low income students could account for part of the difference in the "freed income" effects between the two quartiles. Since average term-time earnings and loan proceeds were nearly equal across income groups, a similar explanation based upon variations in amounts of support from these sources would not be as valid.

As Figure VIII-2 shows, the low ability group experienced the smallest estimated "freed income" effect as parental support dropped $200 below what parents of similar non-aided students would have provided. Among higher ability groups the estimated effect measures three times that amount. For these latter students, the larger sums of grant and transfer support might be replacing what the parents would otherwise contribute to meet educational expenses.

The estimated effects of student aid among racial/ethnic groups, described in Figure VIII-3, parallel the general findings across income quartiles. The estimated "freed income" effect among black families (who tend to be lower income families, as well) measured $137 -- $640 parental contribution without aid compared to $570 actual parental support. For all families with aided students, financial aid released an estimated $457 from the parental contribution for non-education expenditures.

Finally, a comparison of the impact of student aid between aided male and female entering full-time freshmen, recorded in Figure VIII-4, reveals a somewhat larger "freed income" effect for male students. As shown, parents of aided male students contribute an average $773, or $519 less than estimated for similar parents of non-aided males. For aided females, the released parental support measures an estimated $390.

Figure VIII-2

The Impact of Financial Aid on Parental Outlays by Student/Achievement Ability Groups: "Freed Income" Effects

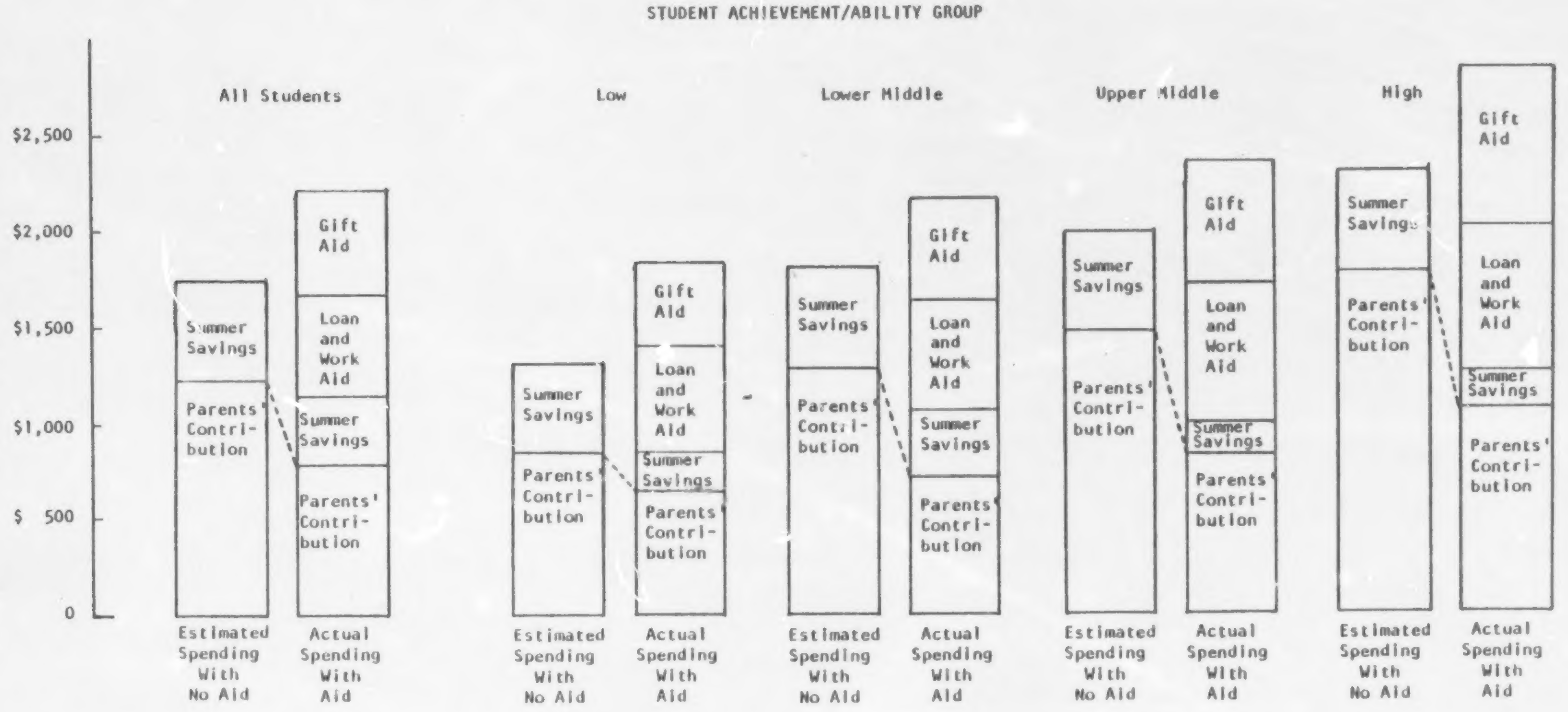
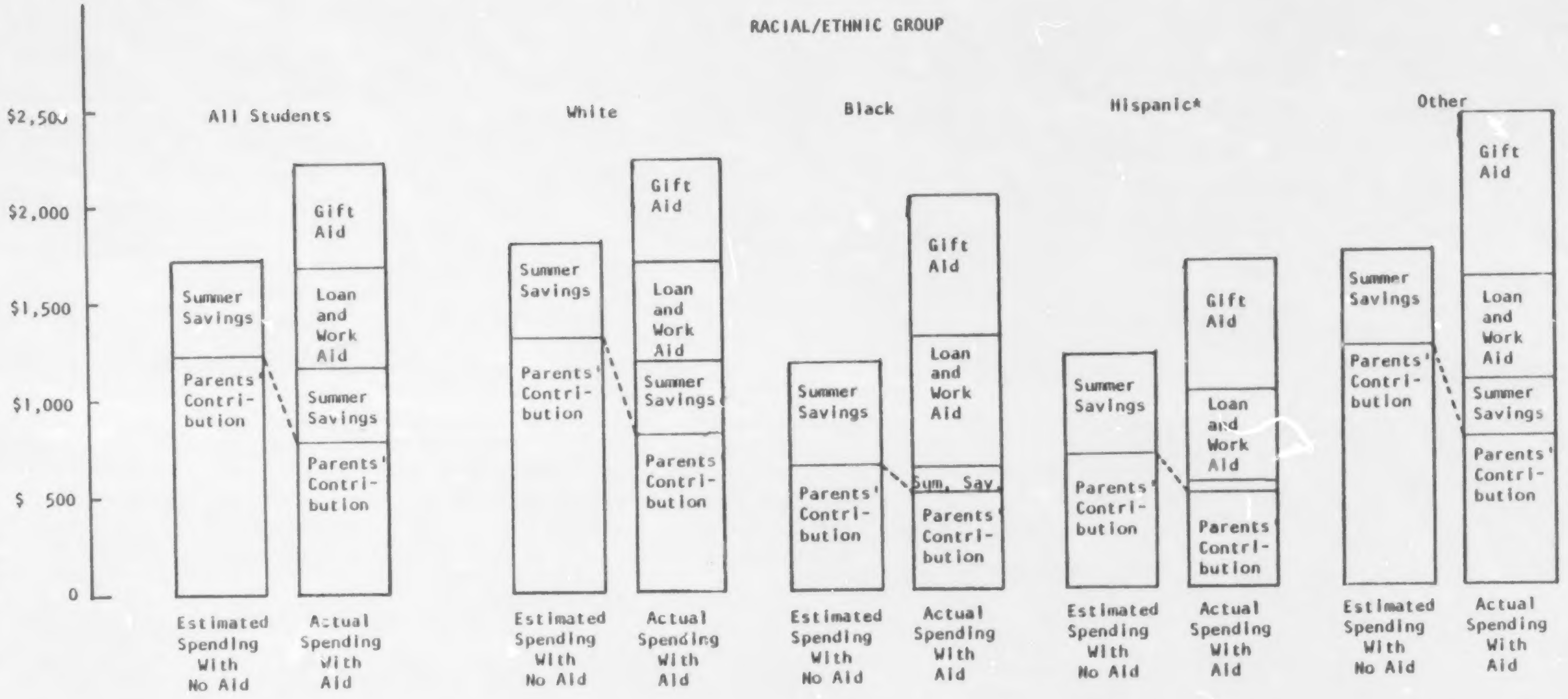


Figure VIII-3

The Impact of Financial Aid on Parental Outlays by Racial/Ethnic Groups: "Freed Income" Effects



*Based on fewer than 80 cases.

C. Parental Support for Education Expenses: A Multivariate Analysis

The hypotheses developed in Chapter VII have been submitted to empirical testing, and the results are presented below. The general form of the parental contribution function developed there can be expressed as:

$$(1)\ PC_k = f(\Sigma A_{i,k}, Y_k, SAT_k, R_k, X_k, EDUC_k, Y_c, \varepsilon)$$

in which

PC_k = parental support for educational expenses

$\Sigma A_{i,k}$ = total amount of financial aid received

Y_k = family income (or comparable measure)

SAT_k = student's SAT score

R_k = student's racial/ethnic group (1 = white)

X_k = sex of student, (1 = male)

ED_k = parent's educational attainment (in years)

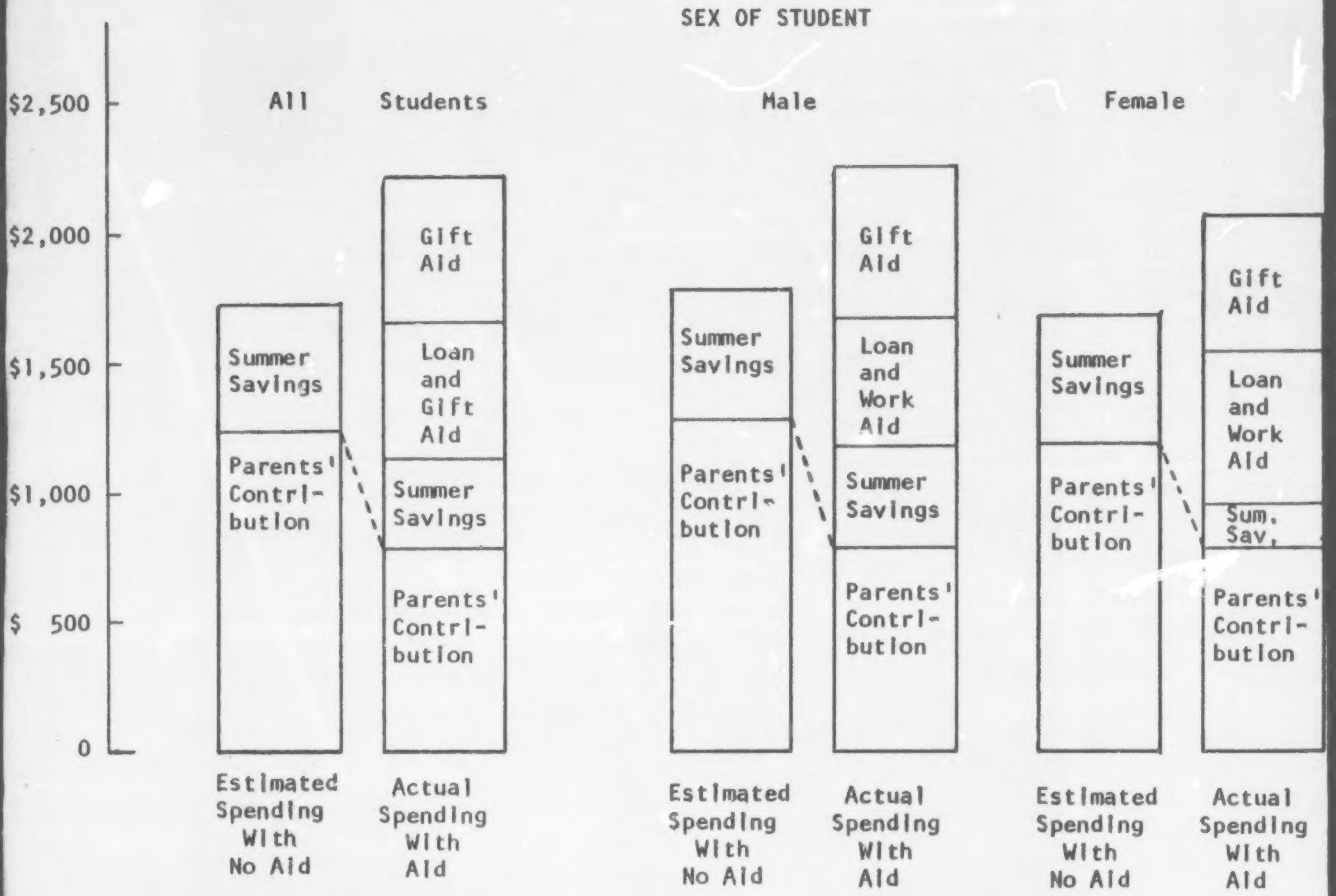
Y_c = median family income in student's community

ε = all other influences and random disturbance

The basic OLS estimates of equation (1) are presented in Section 1. Here, aggregate aid received ($\Sigma A_{i,k}$) is employed as the sole financial aid variable. The discussion examines the differences among the influences on parental support across family income groups. In Section 2, the results of re-estimating equation (1) separately for selected institutional sectors are considered. Section 3 contains the results of an attempt to separate out the effects of different types of student aid on parental support. Essentially, a "predicted" parental contribution is

Figure VIII-4

The Impact of Financial Aid on Parental Outlays by Sex of Student "Freed Income" Effects



generated from the parameter estimates in equation (1). Deviations from the "predicted" contribution are then regressed on the individual aid measures. This two-step procedure controls, in part, for interactions among the explanatory variables and for the size of the aid package.

1. Determinants of the Parental Contribution

Table VIII-5 presents the results of the OLS estimates of the parental contribution function, applied separately to low, middle, and high income groups.

Total Aid. Consistent with the descriptive data discussed above, funds from all non-family sources substituted, in part, for parental support. The effect clearly differed across income groups. Every additional $100 increase in student aid reduced the estimated parental contribution from low income parents by $19. Among high income parents, this "income substitution" effect was over twice as great. Looked at another way, a ten percent increase in total aid produced a .1 percent decrease in parental support from high income families compared to a .3 percent decrease in low income families.[/] It seems reasonable to conclude that low income parents tend to provide whatever was necessary to finance an enrollment.

[/] The estimates are calculated at the mean values of the relevant variables.

For high income families,

$$\Delta PC_k = -.4473 \times (.10 \times \$326)$$

For low income families,

$$\Delta PC_k = -.1883 \times (.10 \times \$982)$$

Mean parental contribution measured $1,686 among high income families and $569 among low income families. See Appendix B.

Table VIII-5

Parental Contributions for Postsecondary Education

(Underlined coefficients are significant at the .05 level; standard errors are in parentheses)

DEPENDENT VARIABLE	Total Aid $\Sigma A_{i,k}$	Available Income AY_k	SAT Score SAT_k	Racial/Ethnic Group R_k	Student Sex X_k	Parental Education ED_k	Community Income Y_c	Constant
(5.1) PC_k, All Students R^2 = .28 F = 664.24	-.2749 (.0096)	.0769 (.0024)	.5508 (.0288)	-142.6 (25.68)	-140.3 (16.10)	37.26 (3.185)	.0105 (.0019)	80.22
(5.2) PC_k, Low Income R^2 = .17 F = 69.69	-.1883 (.0107)	.0570 (.0060)	.0547 (.0383)	-101.3 (24.82)	-47.83 (20.54)	12.84 (4.144)	.0059 (.0030)	678.0
(5.3) PC_k, Middle Income R^2 = .14 F = 134.90	-.2206 (.0106)	.0774 (.0050)	.3633 (.0325)	-27.90 (31.62)	-97.29 (18.10)	17.85 (3.923)	.0018 (.0023)	336.6
(5.4) PC_k, High Income R^2 = .19 F = 125.97	-.4473 (.0280)	.0904 (.0097)	1.128 (.0690)	144.5 (80.24)	-225.3 (39.45)	44.74 (6.410)	.0188 (.0040)	-891.2

Available Income. All parents marginally increased contributions by an estimated $57 to $90 for every $1,000 increase in available income. The elasticity of parental constributions with respect to income increased across income groups from .1 to .4. That is, a 10 percent improvement in income would produce a 4 percent increase in parental support for the high income student compared to a one-tenth of one percent increase for the low income student._/ Since many of the low income students in the NLS sample would have been expected to receive no support from their parents (according to CSS need analysis methodology), the low estimated elasticity among these families is quite understandable. That there existed any elasticity in the low income family budget can be viewed as evidence of a willingness to undertake the postsecondary educational investment, in spite of a measured lack of ability to finance its costs.

SAT Score. In equations (5.1) to (5.4), the student's academic aptitude exhibited the hypothesized positive influence on parental contributions. Overall, a 100 point improvement in SAT scores elicited an additional $55 in parental support. For the higher income student, the scores represented a strong influence. Here, the student possessing an SAT score 10 percent above the mean encouraged a 6 percent increase in parental support._/ On the other hand, measured ability did not significantly influence parental contributions among low income families. In part, the latter result might reflect the decisions of all low income students to enroll disproportionately in low cost institutions. Whether due to lack of financial aid or lack of

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_/ The elasticities are estimated at the mean values of the relevant variables. Available income averaged -$1,427 among low income families and $8,408 among high income families. See Appendix B.

_/The estimate is calculated at the mean value of the relevant variables. See Appendix B.

information, many able, low income students continue to decide against the higher cost private institutions. Among the more affluent, financial and information limitations would not be binding.

Racial/Ethnic Group. The race dummy variable in equation (5.1) suggests that minority freshmen received $142 more in parental support than did their majority peers. A similar result emerges among low income respondents (equation [5.2]), although the variable becomes insignificant over higher income ranges._/

The racial/ethnic differences in parental support are hypothesized to reflect underlying differences in the expected returns from higher education. There is accumulating evidence that, in fact, the money returns to minority college graduates have improved and that these improvements are perceived by this group of students and their families.

Highly educated minorities have nearly achieved comparability in starting salaries with their majority peers. At lower education levels, salary levels of minorities continue to lag behind the earnings of whites (See Freeman [1977]). This would suggest that the increment to income due to advanced training is now larger for Blacks and other minorities than for whites. Further, it appears that minorities are perceiving these differences (Mahon, Hoang, and Wagner [1976]). Hence, minority students and their parents might well find the postsecondary education investment relatively more attractive and respond to these improved expectations by increasing their outlays.

_/The very small share of full-time minority freshmen in the top three income quartiles is one possible explanation for the latter result.

Student Sex. From equation (5.1), female freshmen received an estimated $146 in parental support more than male freshmen. This pattern obtains across all income groups, although the measured difference was greatest among students from high income families (equation [5.4]).

The results pose a small puzzle. Parents might be hypothesized to contribute more *if* the money returns are greater. But, if males continue to earn more than females, why whould parents provide more support for their daughters? Among others, two explanations seem most convincing.[/] First, as noted earlier women students were expected to provide smaller contributions from their summer earnings than males. If financial aid did not fully cover the estimated shortfall, the parents would likely make up the difference. Second, these entering full-time female freshman might have been perceiving the future impact of affirmative action on hiring practices. In the McMahon, et al. study cited earlier, women tended to anticipate higher earnings than the amounts actually received by older women on the job. In either case, greater student and parental support would have been forthcoming.

Parental Education. As hypothesized, parental education exhibited a positive and significant influence on parental contributions for postsecondary education. The presumed effect increases across income groups, such that an additional year of education was associated with about $13 more parental support in low income households compared to $45 more support in high income households. This pattern probably reflects the greater capacity of high income families to spend for postsecondary education (the zero order correlation between available income and parental education

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[/] A third, that freshmen women tended to incur larger costs and require greater parental contributions, is not consistent with the small differences in total costs between sexes shown in Table VIII-4 above.

measures .25).[/]

Median Community Income. Two potential influences on parental contributions were hypothesized to be measured by the median family income in the student's home community. Specifically, in communities with relatively higher family incomes, higher college-going rates would have introduced Dusenberry-type demonstration effects ("keeping up with the Joneses") and greater levels of external, non-household information about postsecondary education opportunities.

Overall, the median income variable exhibited a positive and significant influence on parental spending, as hypothesized. Of interest, only among low and high income families was the presumed effect statistically significant. As one possible interpretation, the observed association within low income households might have been produced by the availability of information on postsecondary education opportunities. Further, parents in high income families might have spent more, other things equal, to emulate their neighbors. In the latter instance, a private college enrollment would be a likely outcome.

2. Determinants of the Parental Contribution within Institutional Sectors

The general OLS regression results estimated separately for selected institutional sectors are shown in Table VIII-6. The observed differences

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[/] An alternative hypothesis--that parental information on and tastes for postsecondary education were reflected by the level of as well as maringal changes in educational attainment of the parents--was also examined. To test this hypothesis, the attainment variable was replaced by its squared value and equation (5.1) re-estimated. The "fit" (measured by the adjusted R^2) was not improved, nor was the significance of the education term or any other explanatory variable greatly changed. These results are shown in Appendix B.

Table VIII-6

Parental Contributions for Postsecondary Education

(Underlined coefficients are significant at the .05 level; standard errors are in parentheses)

DEPENDENT VARIABLE	EXPLANATORY VARIABLES							
	Total Aid	Available Income	SAT Score	Racial/ Ethnic Group	Student Sex	Parental Education	Community Income	Constant
	$\Sigma A_{i,k}$	AY_k	SAT_k	R_k	X_k	ED_k	Y_c	
(6.1) PC_k, All Students R^2 = .28 F = 664.24	-.2749 (.0096)	.0769 (.0024)	.5508 (.0288)	-142.6 (25.68)	-146.3 (16.10)	37.26 (3.185)	.0105 (.0019)	80.22
(6.2) PC_k, Public Four Year R^2 = .33 F + 290.85	-.4093 (.0168)	.0608 (.0033)	.1277 (.0436)	-99.34 (33.90)	-120.5 (21.17)	23.24 (4.258)	.0039 (.0026)	665.7
(6.3) PC_k, Public Two Year R^2 = .14 F = 423.94	-.1893 (.0163)	.0276 (.0027)	.1411 (.0338)	10.94 (28.54)	8.065 (18.08)	-1.497 (3.967)	-.0057 (.0034)	678.9
(6.4) PC_k, Private Four Year R^2 = .53 F + 359.28	-.5461 (.0211)	.1274 (.0070)	.5289 (.0942)	-239.8 (74.18)	-178.3 (44.78)	35.31 (7.768)	.0211 (.0046)	821.9

in the determinants of parental support among institution sectors can, of course, be compared to other data presented for these widely-used institutional categories. Beyond comparisons of general interest, however, the partitioning cuts across several of the specified explanatory variables examined above. Students at private four-year institutions tended to come from higher income families, to receive more financial aid, and to require and receive larger amounts of parental support. Public two-year college freshmen were lower ability, from lower income families, and received a larger share of support from their parents.

Total Aid. Not surprisingly, student aid exhibited its greatest effect on parental support among private four- year college students. In absolute terms, $100 more in aid reduced the level of parental contributions for the educational expenses of these students by an estimated $55. Among parents of public two-year college students, the same increase in aid reduced support by about $19. Expressed another way , a one percent increase in the amount of aid apparently reduced parental contributions by .21, .08, and .36 percent for public four-year, public two-year, and private four-year college students, respectively.[/] Apparently, the aid encouraged spending most in the two-year institutions while substituting for parental support most in the four-year colleges. In no sector, however does the reduction in parental support even nearly match the incremental aid award.

Income. Within all sectors, parents from higher income families tended to contribute more toward educational expenses. The available income parameter estimates in equations (6.2) to (6.4) imply that parents of students attending private four-year institutions increased support the most for

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[/] These estimates are calculated at the mean values of the relevant variables. See Appendix B.

incremental changes in income. Specifically, private four-year college freshmen from families with available incomes ten percent greater than average received 3.4 percent larger parental contributions. For similar public four-year and public two-year college students, parental contributions were an estimated 2.4 and 1.3 percent greater.[/] No doubt the lower public sector costs limited the additional amount parents might have provided.

SAT Score. Again, within all sectors parents seem to have responded to the student's capacity to benefit from postsecondary training as measured by the SAT score. The estimated coefficient was greatest among families with students at private four-year institutions. Here, a 100 point difference in SAT scores brought about an estimated $53 change in the level of parental support. In the public sector, a similar score difference resulted in an estimated $13 to $14 change in parental contributions.

These differences are to be expected, and seem generally consistent with observed enrollment behavior. More able students tended to enroll at better four-year institutions or to live on campus. Either exercised option increased the necessary total out-of-pocket expenditure and would have required more parental support.

Racial/Ethnic Group. While generally in agreement with the finding that minority parents contribute more toward postsecondary expenses than similarly situated majority parents, the estimates of the influence of racial/ethnic background across institutional sectors provided two further

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[/] See the calculations in Appendix B.

results worth noting. First, minority freshmen enrolled at private four-year institutions received an estimated $240 more in parental support than their majority peers. This difference is quite large, and suggests that, when opportunities for postsecondary education investment became available, minority parents were quite willing to assume a large share of the cost. On the other hand, no significant difference in parental support between minority and majority freshmen at public two-year institutions was evident. Both the relatively low income of all public two-year students and the low costs of attendance might have influenced this result._/

Parental Education. Within the four-year institutional sectors, parental education significantly encouraged parental spending for postsecondary education. These results are similar to those reported above: an additional year of attainment was associated with an estimated two percent greater parental contribution. Parental educational attainment, however, exerted no significant effect on parental contributions for entering full-time freshmen at public two-year institutions. Again, the relatively low costs of attendance would have tended to inhibit greater levels of support._/

_/The adjustments to the parental contribution data (described in Chapter II) might also account for the regression results. Recall that, for commuters, an "in-kind" parental contribution was imputed for those not reporting sufficient room and board costs or parental contributions. The standard adjustment would not be sensitive to differences in expenditures by race or sex. In fact, differences in parental support by sex were significant only at four-year institutions (see Table VIII-6).

_/It might also be argued that the parents of students at public two-year institutions exhibit lower levels of educational attainment and, having less experience with (or perception of) the investment returns, would not increase their support (see Wagner [1977]). Certainly, among some poorly educated groups this would be true. But, note that our earlier estimates of the parental education effect on parental support for low income students was significant (Table VIII-5). Further, differences in mean educational attainment among sectors was quite small (less than one year).

Community Income. The estimates shown in equations (6.2) to (6.4) imply that students from higher income communities received greater amounts of parental support only if they attended private four-year institutions. This result suggests that the "demonstration" or "information" effects work primarily toward encouraging enrollments in the private sector._/

3. The Effects of Different Types of Financial Aid on Parental Contributions

The results just presented indicate that financial aid substitutes for parental support. In this section, the separate effects of different types of financial aid on the level of parental support are explored. There is some evidence that these effects differ. McMahon (1974b) found that parental contributions were reduced in the amounts of $17 for every $100 increase in student loans, $14 for every $100 increase in grant aid, and only $ .10 for every $100 increase in part-time work proceeds. However, he confined his study sample to 1972-73 enrolled upperclassmen at public institutions who anticipated continuing on to obtain an advanced degree. Other enrollment demand studies have inferred greater price response (enrollment elasticities) for grant and scholarship aid relative to proceeds

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_/The significant, negative coefficient estimated for the community income term among families with students at public two-year institutions deserves some discussion. Since entering freshmen at these institutions generally lived at home and on-campus housing was not provided, total outlays (and the parental contribution) would have been limited among all community income levels. In support of this interpretation, the community income measure exhibited a weak, positive association with parental support (zero order correlation coefficient of .06). Hence, the community income term might be statistically reinforcing the estimated impact of available income and parental education. Both family attributes carry a much stronger association with the median income measure (partial $r > .26$).

from part-time work or student loans (see Carlson [1974]). Thus, while available evidence suggests that different types of aid will differently affect the level of parental support, estimates have not been forthcoming.

A two-step estimation procedure has been employed in an attempt to separate out these effects. In the first step, the actual parental contribution was regressed on the specified student and family determinants plus the total amount of financial aid received (equation [1] above). The results of this step were presented in Table VIII-5 above. The parameter estimates from the equation (1) regressions were then used to generate a "predicted" parental contribution._/ That is, students of equal income, the same race and sex, and with the same amount of financial aid were "predicted" to have received the same level of parental support. In fact, many students received more (or less) than this "predicted" amount; the deviation from "predicted," then, was presumed to be influenced, in part, by the composition of the financial aid package.

_/ The "predicted" parental contribution should be distinguished from "expected" parents' contribution, as provided by need analysis. Most important, the latter represents an estimate of what the parents should contribute. Financial aid administrators commonly distribute funds based upon this measure. The "predicted" contribution represents an estimate of what parents actually contribute, after receiving aid. In concept, the "predicted" should not be very different from the "expected." In fact, given the normative judgments implicit in need analysis calculations, the inadequate funding of demonstrated need, and other, non-financial influences on parental spending, the two measures rarely converge.

Specifically,

(2) $\hat{PC}_k - PC_k = f\ (A_{i,k},\ \mu)$

where

PC_k = "predicted" level of parental support, calculated from parameter estimates of equation (1).

PC_k = actual parental contribution toward educational expenses.

$A_{i,k}$ = the amount of the i^{th} type of financial aid offered and received.

μ = all other influences not measured and random disturbance.

To give some intuitive feel for the interpretation of equation (2), recall that $\hat{PC}_k$ included an estimate of the impact of all aid on the level of parental support. Overall, this aid partly substituted for what parents would otherwise have provided (see Table VIII-5). Different types of aid, however, do not necessarily substitute for parental support to the same extent as all aid taken together. Since, by definition, student loans and term-time work are student contributions (student self-help), these types of aid might have been expected to substitute for parental contributions to a greater extent than all aid taken together. Holding $\hat{PC}_k$ fixed, greater levels of loans or earnings in the financial aid package would have reduced PC_k, or increased $\hat{PC}_k - PC_k$.

Different Types of Aid. In Table VIII-7, the results of equation (2) with the different types of aid -- gift aid, term-time work, student loans, and transfer income benefits -- as regressors are presented. Estimates are shown for all students and, separately, for three income groups. Note, first, that the R^2 are nearly zero. Much of the variation in actual parental contributions has already been explained ($\hat{PC}_k$). Therefore, the poor estimated "fit" is to be expected.

For all students, only term-time work earnings and transfer income benefits significantly differed from total aid in the extent of which they substituted for parental support. For both types, relatively larger amounts in the aid package tended to reduce parental contributions. Holding the total level of aid fixed, an increase of \$100 in term-time earnings (balanced by a reduction in grant or scholarship aid and/or student loans) reduced parental support by an estimated \$11 under the contribution received by the typical student. A similar increase in transfer income benefits reduced parental support by about \$8.[/]

Across income groups, two interesting results emerged. First, compared to the typical freshmen, relatively greater amounts of grant and scholarship aid significantly encouraged parental support among low income families. On the other hand, gift aid induced further reductions of parental support for high income students. The estimated impacts, however, were not great. An increase of \$100 in grant or scholarship aid (with, say, a reduction in transfer income benefits by the same amount) increased low income parental contributions by about \$4 and decreased high income parental contributions by about \$9.

[/] Recall that a negative estimated coefficient suggests that actual parental contributions (PC_k) are increased relative to the "predicted" contribution ($\hat{PC}_k$).

Table VIII-7

The Effects of Different Types of Aid on Parental Contributions for Postsecondary Education

(Underlined coefficients are significant at .05 level; standard errors are in parentheses)

DEPENDENT VARIABLE[a]	EXPLANATORY VARIABLES				
	Grant and Scholarship Aid	Term-Time Work Aid	Student Loan Aid	Benefit Aid	Constant
(7.1) $\hat{PC}_k - PC_k$, All Students	-.0159 (.0132)	.1112 (.0298)	-.0307 (.0177)	.0854 (.0331)	-4.059
R^2 = .00 F = 6.09					
(7.2) $\hat{PC}_k - PC_k$, Low Income	-.0363 (.0147)	-.0373 (.0381)	.0221 (.0243)	-.0657 (.0355)	-1315.
R^2 = .00 F = 2.67					
(7.3) $\hat{PC}_k - PC_k$, Middle Income	.0026 (.0176)	.1112 (.0376)	-.0426 (.0211)	.2381 (.0544)	-34.85
R^2 = .01 F = 7.83					
(7.4) $\hat{PC}_k - PC_k$, High Income	.0937 (.0479)	.2952 (.1117)	-.1479 (.0641)	.1501 (.0983)	80.46
R^2 = .00 F = 4.42					

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[a] The dependent variable measures the difference between "predicted" and actual levels of parental support. The "predicted" level is calculated by applying the parameter estimates shown in Table VIII-5 to individual values of each explanatory variable. See text.

Second, among middle and high income families, term-time earnings reduced parental support while student loan proceeds increased parental support beyond what the typical parent in these income groups would have provided. This result suggests that replacing \$100 of work aid with \$100 of loan aid would have reduced the substitution for parental support by \$15 in middle income families and by \$44 in higher income families._/ So, although term-time work may be preferred to student loans on other grounds, the greater reduction in parental support induced by student earnings argues in favor of loan aid.

Different Types of Federal Aid. Equation (2) was re-estimated with Federal grants, Federal College Work-Study earnings, Federal loans, and Federal transfer income benefits as the regressors. The results are shown in Table VIII-8. Again, the estimated "fit" is quite poor. As before, much of the variation in parental contributions has been explained by the equation (1) estimates; this is reflected in $\hat{PC}_k$.

Overall, Federal loan proceeds and Federal transfer income differently affected the level of parental support, although the magnitudes were not very great. A shift of \$100 from gift aid or work-study to loans increased parental support by about \$5. On the other hand, a shift of the same magnitude to Federal benefits reduced parental support by an estimated \$8.

_/This follows from the estimated coefficients shown in Table VIII-7. Holding the total amount of aid fixed, the effects of a \$100 decrease in term-time work aid accompanied by a \$100 increase in loan proceeds can be illustrated as follows (middle income families, equation (7.3)):

$$(\hat{PC}_k - PC_k) = .1112 \times (-\$100) \quad - \quad .0426 \times (+\$100)$$

$$= -\$11.36$$

As described above, this result suggests that the difference predicted and actual parental contributions would be narrowed. Said another way, the altered financial aid package would encourage less substitution for parental support.

In contrast with the estimates in Table VIII-7, College Work-Study earnings did not significantly alter the level of parental support beyond what the typical parent within these groups would have provided. As noted above, earnings from all sources displaced parental support for educational expenses. Since College Work-Study jobs tended to be allocated on the basis of demonstrated need, the results here imply that contributions from parents of needy students were not reduced further with relatively greater amounts of earnings in the aid package. The substitution of student earnings for parental support apparently took place among less needy freshmen from higher income families.

For all but low income students, Federal loans substituted for parental support in smaller amounts than did all aid taken together. From equations (8.3) and (8.4), a $100 larger loan (balanced by a $100 reduction in earnings) increased the estimated parental contribution by $8 to $17. These results are nearly the same as those reported above the total loans.[1]

D. Conclusions

Several interesting and useful results have emerged from the examination of the effects of student aid on parental support for educational expenses.

First, although parents in low income and minority families provided a smaller share of total education costs, student aid substituted the least for parental contributions from these disadvantaged households.

Second, parents of minority or female freshmen tended to contribute more toward educational expenses than did parents of majority or male freshmen other things equal. These results are consistent with evidence of improving employment prospects for minority and female college graduates; parents may

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[1] Among 1972-73 entering full-time freshmen, almost 90% of the loan volume, was generated through Federal programs -- primarily the Guaranteed Loan Program and the National Direct Student Loan Program.

Table VIII-8

The Effects of Different Types of Federal Aid on Parental Contributions for Postsecondary Education

(Underlined coefficients are significant at the .05 level; standard errors are in parentheses)

DEPENDENT VARIABLE[a]	EXPLANATORY VARIABLES				
	Federal Grant and Scholarship Aid	Federal College Work-Study Aid	Federal Student Loan Aid	Benefit Aid	Constant
(8.1) $\hat{PC}_k - PC_k$, All Students	.0359 (.0297)	-.0251 (.0472)	-.0513 (.0198)	.0825 (.0331)	4.377
R^2 = .00 F = 3.78					
(8.2) $\hat{PC}_k - PC_k$, Low Income	.0361 (.0341)	-.0178 (.0435)	.0192 (.0279)	-.0576 (.0355)	-1343.
R^2 = .01 F = 1.26					
(8.3) $\hat{PC}_k - PC_k$, Middle Income	.0492 (.0496)	.0415 (.0568)	-.0785 (.0235)	.2275 (.0544)	-19.85
R^2 = .01 F = 7.79					
(8.4) $\hat{PC}_k - PC_k$, High Income	.2943 (.0961)	.2793 (.2299)	-.1701 (.0745)	.1444 (.0983)	-63.45
R^2 = .00 F = 4.46					

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[a] The dependent variable measures the difference between "predicted" and actual levels of parental support. The "predicted" level is calculated by applying the parameter estimates shown in Table VIII-5 to individual values of each explanatory variable. See text.

well be responding to these improved expectations.

Third, controlling for the amount of financial aid received, family income, and other student/family attributes, parents of more talented high school graduates contributed more toward educational expenses. This was true even among families with no expected contribution (i.e., lowest income quartile).

Fourth, parental educational attainment, presumed to contribute to household tastes for and knowledge about options in postsecondary education, significantly influenced the level of parental contributions. An additional year of education was associated with about $38 more parental support. Further, a proxy measure for the availability of information on post-high school training opportunities (median family income in the community) tended to increase parental spending among low income families -- households in which parental knowledge about the opportunities would be limited.

Fifth, parents of freshmen attending private four-year colleges provided the largest increase in contributions in response to similar increases in family income and SAT scores. Of particular interest, parents of private four-year college minority freshmen contributed $240 more than similarly situated parents of majority freshmen.

Finally, while all financial aid taken together substituted partly for parental support, the extent of the substitution differed across income groups and among types of aid. Overall, a $100 increase in aid reduced parental support by an estimated $27. For low income families, only $19 of parental support was replaced by the $100 increment in aid. In contrast, $100 of added financial aid to freshmen from high income families reduced parental support by $45. Similarly, differences in the composition of the aid package differently affected the level of parental support. In particular, compared to their peers, larger amounts of grant and scholarship aid encouraged parental support only from low income families. Within higher income groups, student loan aid substituted less, and term-time earnings substituted more, for the parental contribution than did all aid taken together. However, College Work-Study earnings tended to substitute for parental support in about the same measure as total aid. Hence, considerations of the reduction in parental contributions brought about by earnings probably would not apply to aid packages for needy students.

Appendix VIII-A

Family Expenditures for Postsecondary Education by Student/Family Attributes and Institution Type and Control

List of Tables

TABLE

A-1 Total Education Expenditures by Family Income Quartile and Institution Type and Control

A-2 Parental Contribution for Education Expenses by Family Income Quartile and Institution Type and Control

A-3 Student Contribution for Education Expenses by Family Income Quartile and Institution Type and Control

A-4 Total Education Expenditures by Achievement/Ability Group and Institution Type and Control

A-5 Parental Contribution for Education Expenses by Achievement/Ability Group and Institution Type and Control

A-6 Student Contribution for Education Expenses by Achievement/Ability Group and Institution Type and Control

A-7 Total Education Expenditures by Racial/Ethnic Group and Institution Type and Control

A-8 Parental Contribution for Education Expenses by Racial/Ethnic Group and Institution Type and Control

A-9 Student Contribution for Education Expenses by Racial/Ethnic Group and Institution Type and Control

A-10 Total Education Expenditures by Sex of Student and Institution Type and Control

A-11 Parental Contribution for Education Expenses by Sex of Student and Institution Type and Control

A-12 Student Contribution for Education Expenses by Sex of Student and Institution Type and Control

TABLE A-1

Total Education Expenditures by Family Income Quartile and Institution Type and Control

FAMILY INCOME

INST TYPE	MEAN COUNT STD DEV	UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	OVER $15,000 4	ROW TOTAL
PUBLIC 4-YEAR	1	1890,88 1025 712,53	1950,88 1079 865,16	1992.18 1460 728.19	2122.06 1860 873.22	2009,35 5424 812,23
PUBLIC 2-YEAR	2	1533,22 713 1463,12	1354,55 679 570,25	1364.50 930 632.47	1360,29 729 887,36	1401,18 3051 942,69
PRIVATE 4-YEAR	3	3136,74 350 1076,30	3033,15 510 1283,40	3229.69 714 1097.92	3910.68 1078 1368.71	3452,33 2651 1304,91
PRIVATE 2-YEAR	4	2440,97 39 813,39	2185,15 42 1087,72	2431.62 58 784.42	2836.87 110 1855,22	2571,00 248 1419,74
PROFIT-MAKING	5	2258,31 149 917,32	2251,62 158 914,61	2011.92 196 1066.47	2598,33 105 1299.91	2186,77 608 1258,81
VOCATIONAL	6	1574,14 159 1103,28	1427,91 92 939,84	1482.69 125 796.42	1642,69 63 844,33	1522,96 441 953,33
OTHER	7	2178,19 29 1318,92	1788,23 69 873,41	2030.41 40 1176,57	2927.16 39 3175.47	2156,50 177 1797,50
COLUMN TOTAL		1963,74 2465 1192,72	2025,03 2630 1077,90	2063.67 3523 1244.78	2499.12 3983 1452.96	2169,92 12600 1242,27

TABLE A-2

Parental Contribution for Education Expenses by Family Income Quartile and Institution Type and Control

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                                   FAMILY INCOME

           MEAN I UNDER        $ 7,500 -    $10,500 -    OVER
          COUNT I $   7,500    $10,500      $15,000      $15,000          ROW
        STD DEV I                                                     TOTAL
                I         1 I         2 I         3 I         4 I
INST TYPE --------I-----------I-----------I-----------I-----------I
               1  I    528,96 I    765,69 I    966.55 I   1454,14 I   1010,94
PUBLIC 4-YEAR     I      1025 I      1082 I      1460 I      1860 I      5427
                  I    567,32 I    607,83 I    708.42 I    923,90 I    827,94
                 -I-----------I-----------I-----------I-----------I
               2  I    573,90 I    652,82 I    772,24 I    860,43 I    720,37
PUBLIC 2-YEAR     I       713 I       679 I       930 I       729 I      3051
                  I    422,47 I    424,42 I    460.36 I    463,39 I    457,22
                 -I-----------I-----------I-----------I-----------I
               3  I    535,38 I    953,52 I   1349.10 I   2711,82 I   1719,73
PRIVATE 4-YEAR    I       350 I       510 I       714 I      1078 I      2651
                  I    566,78 I    863,00 I   1014,04 I   1575,29 I   1485,10
                 -I-----------I-----------I-----------I-----------I
               4  I    548,06 I    972,34 I   1368.88 I   2019,54 I   1460,56
PRIVATE 2-YEAR    I        39 I        42 I        58 I       110 I       248
                  I    604,94 I    830,72 I    895.98 I   1820.16 I   1457,40
                 -I-----------I-----------I-----------I-----------I
               5  I    765,45 I    694,85 I    887.12 I   1517.41 I    915,78
PROFIT-MAKING     I       149 I       158 I       196 I       105 I       608
                  I    699,16 I    517,55 I   1055.12 I   1355.49 I    970,03
                 -I-----------I-----------I-----------I-----------I
               6  I    625,19 I    789,28 I    732.85 I    964.77 I    738,95
VOCATIONAL        I       159 I        92 I       126 I        63 I       441
                  I    546,77 I    655,40 I    716.65 I   1200.68 I    747,60
                 -I-----------I-----------I-----------I-----------I
               7  I    684,25 I    837,91 I   1182.24 I    958.56 I    916,12
OTHER             I        29 I        69 I        40 I        39 I       177
                  I    540,20 I    531,51 I   1171.62 I   1189,81 I    888,66
                 -I-----------I-----------I-----------I-----------I
      COLUMN TOTAL     565,55      774,66      989,01     1690,50     1083,10
                         2465        2632        3523        3983       12603
                       540,35      634,22      790.14     1317.17     1027,17
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TABLE A-3

Student Contribution for Education Expenses by Family Income Quartile and Institution Type and Control

FAMILY INCOME

INST TYPE	MEAN COUNT STD DEV	UNDER $ 7,500 1	$ 7,500 - $10,500 2	$10,500 - $15,000 3	OVER $15,000 4	ROW TOTAL
	1	722,40	735,85	696.62	510,51	646,05
PUBLIC 4-YEAR		1525	1079	1463	1360	5424
		741,19	641,70	746.50	630,31	693,89
	2	481,44	457,00	400.83	315,39	411,76
PUBLIC 2-YEAR		713	679	930	729	3051
		702,45	535,27	557.63	567,91	594,78
	3	1129,51	1188,75	1154.38	699.72	972,53
PRIVATE 4-YEAR		350	506	714	1078	2647
		1047,35	1196,75	977.69	983.09	1058,28
	4	1320,59	961,25	644.52	649.57	806,54
PRIVATE 2-YEAR		39	42	58	110	248
		955,54	1275,75	563.13	796.24	907,06
	5	942,46	1289,80	997.45	838.66	1032,28
PROFIT-MAKING		149	158	196	125	608
		807,14	1014,80	953.99	970.99	951,92
	6	670,21	427,75	655.65	463,75	587,82
VOCATIONAL		159	92	126	63	440
		1067,49	555,35	729.32	735.70	844,73
	7	940,40	509,76	536.36	712,71	631,45
OTHER		29	69	40	39	177
		774,53	535,26	651.73	841,79	690,78
COLUMN TOTAL		734,01	771,09	723.89	539,69	677,46
		2965	2625	3523	3983	12596
		841,70	840,25	809.67	763,16	813,76

TABLE A-4

Total Education Expenditures by Achievement/Ability Group and Institution Type and Control

SAT SCORE

INST TYPE	MEAN COUNT STD DEV	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
1		1869,83	1914,88	2062.14	2149.47	1989,79
PUBLIC 4-YEAR		1968	1393	1722	1352	6436
		842,24	664,50	866.98	844.46	823,44
2		1421,29	1447,68	1392.79	1145,04	1411,22
PUBLIC 2-YEAR		2476	640	415	153	3684
		1041,74	556,94	519,78	323,99	906,11
3		2971,05	3297,58	3484.17	3963,86	3452,20
PRIVATE 4-YEAR		836	599	789	916	3140
		1228,34	1357,99	1189.57	1222,17	1298,46
4		2491,06	2861,93	2285.13	2797,70	2588,23
PRIVATE 2-YEAR		157	87	45	24	313
		1578,88	1104,72	1264.29	778,46	1376,85
5		2152,46	2120,08	1839.81	2974,79	2186,11
PROFIT-MAKING		266	111	29	48	755
		1029,89	903,01	543.37	1667,30	1266,10
6		1492,35	1554,65	1513.24	1718,54	1506,24
VOCATIONAL		444	71	42	11	565
		918,11	656,75	716.95	1241,97	882,51
7		2137,77	2038,06	2108.47	2218,48	2113,64
OTHER		106	52	23	14	195
		2228,20	1015,05	894.71	1216,78	1768,43
COLUMN TOTAL		1858,86	2123,11	2332.00	2769.21	2158,59
		6253	2953	3063	2518	15087
		1162,30	1079,83	1173.39	1377,18	1233,87

TABLE A-5

Parental Contribution for Education Expenses by Achievement/Ability Group and Institution Type and Control

SAT SCORE

INST TYPE	MEAN COUNT STD DEV	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
PUBLIC 4-YEAR	1	883,39	1022,82	1119.01	1146.36	1031,86
		1969	1396	1722	1352	6439
		787,10	776,03	870.36	869.53	832,22
PUBLIC 2-YEAR	2	709,46	796,78	753.01	822.19	734,22
		2476	640	415	153	3684
		481,09	405,25	399.58	336.60	456,18
PRIVATE 4-YEAR	3	1327,29	1752,64	1818.04	2087.39	1753,54
		836	599	789	916	3140
		1259,21	1587,48	1411.25	1603.61	1494,48
PRIVATE 2-YEAR	4	1509,32	1530,52	1394.81	1771.44	1518,98
		157	87	45	24	313
		1619,16	1086,95	1123.36	1153.81	1383,62
PROFIT-MAKING	5	955,83	1129,14	624.69	1433.04	992,38
		566	111	29	48	755
		1231,28	864,39	539.03	1992,87	1087,80
VOCATIONAL	6	747,56	662,19	991.25	663.26	753,95
		444	71	42	11	565
		762,02	471,08	1208.75	398.19	748,85
OTHER	7	1019,39	644,06	1643.43	610.21	961,98
		106	52	23	14	195
		1129,81	463,00	1002.39	388.72	979,70
COLUMN TOTAL		888,45	1124,61	1251.04	1474,87	1106,17
		6553	2956	3063	2518	15090
		858,33	1011,45	1064.43	1289,85	1036,97

TABLE A-6

Student Contribution for Education Expenses by Achievement/Ability Group and Institution Type and Control

SAT SCORE

INST TYPE	MEAN COUNT STD DEV	UNDER 800 1	800 - 950 2	950 - 1,100 3	OVER 1,100 4	ROW TOTAL
PUBLIC 4-YEAR	1	642,51	611,76	597.59	630,87	621,38
		1964	1393	1722	1352	6432
		702,59	667,80	690.95	679.64	687,32
PUBLIC 2-YEAR	2	409,39	478,97	458.50	222,45	415,92
		2476	640	415	153	3684
		617,39	546,27	593.52	299.67	594,79
PRIVATE 4-YEAR	3	947,43	894,28	968.53	963,24	947,18
		836	599	785	916	3136
		1117,62	1161,90	1081.68	1042.81	1095,31
PRIVATE 2-YEAR	4	721,41	1033,54	590.70	600,49	780,16
		157	87	45	24	313
		961,82	966,89	668.88	488.97	910,23
PROFIT-MAKING	5	930,33	969,33	1296.80	1470.46	984,54
		566	111	29	48	755
		853,93	1091,27	1078.36	1263.82	940,77
VOCATIONAL	6	571,74	645,21	398,27	1032.62	577,21
		444	71	43	11	565
		859,12	628,33	415.95	676.26	807,34
OTHER	7	565,88	803,30	259.52	653,91	600,30
		106	52	23	14	195
		662,11	722,80	380.03	680,08	670,29
COLUMN TOTAL		612,21	670,31	675.33	744,48	658,48
		6549	2953	3059	2518	15079
		792,53	815,53	821.39	858,12	816,74

TABLE A-7

Total Education Expenditures by Racial/Ethnic Group and Institution Type and Control

```
                                      RACIAL/ETHNIC GROUP

                 MEAN I
                COUNT I   WHITE       BLACK       HISPANIC      OTHER              ROW
              STD DEV I                                                            TOTAL
                      I        1 I         2 I          3 I          4 I
INST TYPE    --------I----------I-----------I------------I------------I
                    1 I  2008,99 I   1754,04 I    1727.98 I    2034,22 I      1985,23
PUBLIC 4-YEAR         I     5572 I       482 I        123 I        219 I         6396
                      I   829,68 I    694,63 I     614.27 I     847,37 I       820,72
                     -I----------I-----------I------------I------------I
                    2 I  1388,95 I   1581,76 I    1282,62 I    1460,59 I      1395,37
PUBLIC 2-YEAR         I     3154 I       193 I        172 I        152 I         3671
                      I   678,13 I   1143,03 I     628.39 I     984.96 I       724,19
                     -I----------I-----------I------------I------------I
                    3 I  3451,19 I   3081,47 I    3167,52 I    3778,08 I      3438,52
PRIVATE 4-YEAR        I     2802 I       174 I         33 I        104 I         3112
                      I  1289,69 I   1354,15 I     996.20 I    1348,73 I      1296,66
                     -I----------I-----------I------------I------------I
                    4 I  2587,69 I   2343,67 I    3053.25 I    2337,04 I      2579,36
PRIVATE 2-YEAR        I      297 I         6 I          1 I          8 I          312
                      I  1398,80 I    869,65 I       0.00 I    1019.11 I      1378,52
                     -I----------I-----------I------------I------------I
                    5 I  2234,33 I   2021,27 I    1887.95 I    2134.17 I      2197,66
PROFIT-MAKING         I      638 I        77 I         17 I         30 I          762
                      I  1277,08 I    939,34 I    1393.30 I    1272.44 I      1272,71
                     -I----------I-----------I------------I------------I
                    6 I  1527,61 I   1635,98 I    1450.00 I    1422.56 I      1513,78
VOCATIONAL            I      501 I        37 I          1 I         25 I          564
                      I   927,98 I    993,71 I       0.00 I     663.76 I       904,58
                     -I----------I-----------I------------I------------I
                    7 I  2297,91 I   2065,34 I    1535.93 I     865,56 I      2264,12
OTHER                 I      171 I        13 I          6 I          2 I          192
                      I  1829,17 I   1488,21 I     923.33 I     190.07 I      1775,13
                     -I----------I-----------I------------I------------I
    COLUMN TOTAL         2173,31     1979,08      1651.91      2185.72        2148,77
                           13134         982          353          540          15009
                         1208,85     1107,97       897.18      1299.02        1202,82
```

TABLE A-8

Parental Contribution for Education Expenses by Racial/Ethnic Group and Institution Type and Control

RACIAL/ETHNIC GROUP

INST TYPE	MEAN COUNT STD DEV	WHITE 1	BLACK 2	HISPANIC 3	OTHER 4	ROW TOTAL
PUBLIC 4-YEAR	1	617,04 5568 683,82	666,12 482 752,48	543.18 123 555.44	642,49 219 607,14	622,19 6392 686,36
PUBLIC 2-YEAR	2	404,61 3154 560,04	529,88 193 870,72	313.34 172 522.33	467,60 152 555.69	409,53 3671 584,59
PRIVATE 4-YEAR	3	944,73 2798 1260,98	884,74 174 1122,51	596.67 33 622.52	1081,96 104 1700.56	942,29 3108 1088,68
PRIVATE 2-YEAR	4	782,35 297 917,78	767,13 6 1036,94	1700.00 1 0.47	91,08 8 147.27	769,35 312 915,37
PROFIT-MAKING	5	982,03 638 971,97	1036,86 77 797,37	1406.47 17 881.39	725.74 30 881.59	989,77 762 952,48
VOCATIONAL	6	594,43 501 831,85	599,76 37 687,41	450.00 1 0.00	278,59 25 314.16	580,38 564 808,02
OTHER	7	570,03 171 657,76	709,81 13 852,78	797.61 6 684.78	393,96 2 525.24	584,12 192 670,79
COLUMN TOTAL		650,08 13125 807,92	705,66 982 866,41	485.37 353 617.03	656,32 540 944.81	655,31 15001 813,69

TABLE A-9

Student Contribution for Education Expenses by Racial/Ethnic Group and Institution Type and Control

```
                                   RACIAL/ETHNIC GROUP

              MEAN I
             COUNT I WHITE        BLACK       HISPANIC      OTHER          ROW
           STD DEV I                                                      TOTAL
                   I        1 I        2 I         3 I         4 I
INST TYPE   --------I----------I----------I-----------I-----------I
                 1 I  1273,73 I   627,64 I    650.84 I   1011.59 I    1229,87
PUBLIC 4-YEAR      I   5575   I    482   I    123    I    219    I     6399
                   I  830,26  I   616,39 I    721.87 I    875.83 I     830,81
                  -I----------I----------I-----------I-----------I
                 2 I  751,75  I   648,01 I    559.00 I    661.26 I     733,49
PUBLIC 2-YEAR      I   3153   I    193   I    172    I    152    I     3671
                   I  450,24  I   497,95 I    401.86 I    361.76 I     455,01
                  -I----------I----------I-----------I-----------I
                 3 I  1821,75 I   827,75 I    946.55 I   1422.79 I    1742,61
PRIVATE 4-YEAR     I   2802   I    174   I     33    I    104    I     3112
                   I  1511,55 I   832,26 I    740.00 I   1429.61 I    1494.32
                  -I----------I----------I-----------I-----------I
                 4 I  1522,79 I  1060,96 I    714.00 I   1650,08 I    1514,50
PRIVATE 2-YEAR     I    297   I      6   I      1    I      8    I      312
                   I  1397,14 I   776,62 I      0.00 I   1410.19 I    1386,92
                  -I----------I----------I-----------I-----------I
                 5 I  1049,11 I   531,21 I    359.96 I   1333,00 I     988,23
PROFIT-MAKING      I    638   I     77   I     17    I     30    I      762
                   I  1110,16 I   415,31 I    603.56 I   1323.78 I    1084,24
                  -I----------I----------I-----------I-----------I
                 6 I  742,30  I   770,28 I   1000.00 I    832,09 I     750,93
VOCATIONAL         I    501   I     37   I      1    I     25    I      564
                   I  751,84  I   753,55 I      0.27 I    708,44 I     748,64
                  -I----------I----------I-----------I-----------I
                 7 I  984,23  I   722,83 I    338.81 I    538,53 I     940,53
OTHER              I    171   I     13   I      6    I      2    I      192
                   I  1013,32 I   728,82 I    237.59 I    567,26 I     981,49
                  -I----------I----------I-----------I-----------I
       COLUMN TOTAL   1150,90     665,09      615.70     1011.67      1101,50
                       13136        982         353         540        15012
                      1050,46     638,34      586.11      980.54      1034,43
```

TABLE A-10

Total Education Expenditures by Sex of Student and Institution Type and Control

```
                              STUDENT SEX

                  MEAN I
                 COUNT I   MALE        FEMALE              ROW
               STD DEV I                                   TOTAL
                       I          1 I          2 I
INST TYPE      --------I------------I------------I
                     1 I   2034,26  I   1941,48  I      1988,81
PUBLIC 4-YEAR          I    3296    I    3166    I       6463
                       I    860,69  I    769,76  I       822,95
                      -I------------I------------I
                     2 I   1467,17  I   1350,03  I      1414,59
PUBLIC 2-YEAR          I    2063    I    1679    I       3742
                       I   1077,73  I    624,72  I       904,77
                      -I------------I------------I
                     3 I   3507,97  I   3388,00  I      3449,46
PRIVATE 4-YEAR         I    1614    I    1537    I       3151
                       I   1323,67  I   1267,92  I      1297,96
                      -I------------I------------I
                     4 I   2401,81  I   2711,45  I      2572,19
PRIVATE 2-YEAR         I     144    I     177    I        321
                       I   1080,49  I   1545,50  I      1365,83
                      -I------------I------------I
                     5 I   2263,80  I   2172,04  I      2196,20
PROFIT-MAKING          I     202    I     564    I        766
                       I    944,32  I   1112,77  I      1071,24
                      -I------------I------------I
                     6 I   1446,45  I   1575,72  I      1521,55
VOCATIONAL             I     239    I     332    I        571
                       I    946,49  I    925,33  I       924,68
                      -I------------I------------I
                     7 I   2374,70  I   1887,62  I      2095,67
OTHER                  I      85    I     114    I        199
                       I   2332,63  I   1121,42  I      1758,63
                      -I------------I------------I
        COLUMN TOTAL       2190,82      2122,32         2156,74
                            7644         7568           15212
                           1293,82      1164,64         1232,74
```

TABLE A-11

Parental Contribution for Education Expenses by Sex of Student and Institution Type and Control

```
                                  STUDENT SEX

                     MEAN I
                    COUNT I     MALE       FEMALE            ROW
                  STD DEV I                                  TOTAL
                          I        1 I         2 I
INST TYPE        ---------I----------I-----------I
                        1 I    991,42 I  1069,83 I       1029.81
PUBLIC 4-YEAR             I     3299  I    3166  I        6466
                          I    810,67 I   843,72 I        831.89
                         -I----------I-----------I
                        2 I    721,93 I   751,48 I        735.19
PUBLIC 2-YEAR             I     2063  I    1679  I        3742
                          I    445,13 I   471,94 I        457.53
                         -I----------I-----------I
                        3 I   1673,82 I  1826,57 I       1748.32
PRIVATE 4-YEAR            I     1615  I    1537  I        3151
                          I   1468,48 I  1517,59 I       1494.35
                         -I----------I-----------I
                        4 I   1287,50 I  1674,43 I       1500.96
PRIVATE 2-YEAR            I      144  I     177  I         320
                          I   1067,33 I  1558,32 I       1371.93
                         -I----------I-----------I
                        5 I    817,13 I  1053,87 I        991.38
PROFIT-MAKING             I      202  I     564  I         766
                          I    820,86 I  1159,35 I       1282.51
                         -I----------I-----------I
                        6 I    724,61 I   779,60 I        756.50
VOCATIONAL                I      239  I     332  I         571
                          I    530,74 I   866,82 I        746.42
                         -I----------I-----------I
                        7 I   1012,66 I   928,64 I        953.13
OTHER                     I       85  I     114  I         199
                          I   1159,27 I   816,60 I        974.10
                         -I----------I-----------I
        COLUMN TOTAL          1052,64    1150,66         1102.91
                               7646       7568           15215
                               989,05    1076,39         1234.48
```

TABLE A-12

Student Contribution for Education Expenses by Sex of Student and Institution Type and Control

```
                                    STUDENT SEX

                  MEAN I
                 COUNT I    MALE       FEMALE          ROW
               STD DEV I                               TOTAL
                       I         1 I         2 I
INST TYPE      --------I-----------I-----------I
                     1 I    684,98 I    557,88 I     622.67
PUBLIC 4-YEAR          I     3292  I     3186  I     6459
                       I    717,55 I    647,99 I     687.22
                      -I-----------I-----------I
                     2 I    430,81 I    397,04 I     415.65
PUBLIC 2-YEAR          I     2063  I     1679  I     3742
                       I    595,19 I    591,65 I     593.76
                      -I-----------I-----------I
                     3 I   1041,54 I    848,04 I     947.30
PRIVATE 4-YEAR         I     1615  I     1533  I     3147
                       I   1089,20 I   1094,23 I    1093.72
                      -I-----------I-----------I
                     4 I    721,31 I    798,40 I     763.84
PRIVATE 2-YEAR         I      144  I      177  I      320
                       I    849,62 I    949,81 I     905.69
                      -I-----------I-----------I
                     5 I   1314,31 I    872,04 I     987.72
PROFIT-MAKING          I      202  I      564  I      766
                       I   1169,12 I    832,80 I     950.79
                      -I-----------I-----------I
                     6 I    552,11 I    627,91 I     584.53
VOCATIONAL             I      239  I      332  I      571
                       I    933,91 I    740,95 I     826.98
                      -I-----------I-----------I
                     7 I    638,05 I    556,76 I     591.53
OTHER                  I       85  I      114  I      199
                       I    673,46 I    663,12 I     667.93
                      -I-----------I-----------I
      COLUMN TOTAL          704,26      612,19       658.45
                            7040        7564        15204
                            838,17      792,28       816.93
```

Appendix VIII-B

Means, Elasticities, and Case Counts

List of Tables

TABLE	
B-1	Means for Selected Variables Within Partitioned Groups
B-2	Elasticities: Percent Change in Parental Contributions Induced by a One Percent Change in Selected Variables

TABLE B-1

Means for Selected Variables Within Partitioned Groups
(Standard deviations in parentheses below calculated means)

Variable	Partition						
	TOTAL	FAMILY INCOME			INSTITUTION SECTOR		
		Low	Middle	High	Public 4	Public 2	Private 4
Case Counts	4,758	1,497	2,216	1,045	1,912	1,092	979
PC_k	1,086	569	904	1,688	1,018	721	1,777
	(1,028)	(538)	(739)	(1,320)	(824)	(458)	(1,507)
$\Sigma A_{I,k}$	609	982	640	326	528	309	1,173
	(888)	(997)	(886)	(705)	(694)	(574)	(1,226)
AY_k	3,900	-1,427	3,125	8,408	4,043	3,312	4,723
	(3,986)	(1,851)	(1,858)	(2,016)	(3,986)	(3,930)	(4,066)
SAT_k	818	700	816	895	897	642	962
	(302)	(297)	(294)	(295)	(261)	(273)	(259)
R_k	.87	.70	.90	.94	.87	.87	.89
X_k	.52	.44	.53	.57	.52	.57	.53
ED_k	12.96	11.13	12.50	14.69	13.13	12.36	13.89
	(2.88)	(2.54)	(2.38)	(3.14)	(2.84)	(2.60)	(3.15)
Y_c	13,473	11,932	13,031	15,462	13,358	13,454	14,369
	(4,421)	(2,998)	(3,996)	(4,930)	(4,335)	(3,922)	(5,122)
Y_k	13,733	4,957	11,204	22,640	13,861	12,231	15,408
	(7,284)	(1,817)	(2,028)	(4,543)	(7,242)	(6,640)	(7,686)

TABLE B-2

Elasticities: Percent Change in Parental Contributions Induced by a One Percent Change in Selected Variables

Variable	Partition						
	TOTAL	FAMILY INCOME			INSTITUTION SECTOR		
		Low	Middle	High	Public 4	Public 2	Private 4
$\Sigma A_{i,k}$	-.15	-.32	-.16	-.09	-.21	-.08	-.36
AY_k	.28	.14	.27	.45	.24	.13	.34
SAT_k	.42	--	.33	.60	.11	.13	.29
ED_k	.44	.25	.25	.39	.30	--	.28
Y_c	.07	.12	--	.17	--	-.11	.17
Y_k	.97	.50	.96	1.22	.83	.47	1.10

---

[a] Elasticities calculated at mean values of relevant variables. Specifically,

$$\epsilon_{h,k} = \frac{\hat{\beta}_{h,k} \times (.01 \times \bar{Z}_{h,k})}{\overline{PC}_k}$$

where

$\epsilon_{h,k}$ = calculated elasticity of variable h for the k^{th} type partition

$\hat{\beta}_{h,k}$ = estimated regression coefficient for variable h for the k^{th} partition

$\bar{Z}_{h,k}$ = mean value of variable h for the k^{th} partition (from Table B-1)

$\overline{PC}_k$ = mean parental contribution for the k^{th} partition (from Table B-1)

Where regression coefficients are insignificant, no elasticities are computed.

Appendix VIII-C

Correlation Matrices

List of Tables

TABLE

C-1 Zero-Order Correlation Matrix - All Students

C-2 Zero-Order Correlation Matrix - Low Income

C-3 Zero-Order Correlation Matrix - Middle Income

C-4 Zero-Order Correlation Matrix - High Income

TABLE C-1

Zero-Order Correlation Matrix - All Students

	$\Sigma A_{i,k}$	AY_k	SAT_k	R_k	X_k	ED_k	Y_c
$\Sigma A_{i,k}$	1.00						
AY_k	-.29	1.00					
SAT_k	.11	.22	1.00				
R_k	-.14	.27	.23	1.00			
X_k	-.04	.08	.06	.05	1.00		
ED_k	-.11	.44	.27	.19	.03	1.00	
Y_c	-.11	.32	.18	.09	.05	.27	1.00

TABLE C-2

Zero-Order Correlation Matrix - Low Income

	$\Sigma A_{i,k}$	AY_k	SAT_k	R_k	X_k	ED_k	Y_c
$\Sigma A_{i,k}$	1.00						
AY_k	-.15	1.00					
SAT_k	.20	.23	1.00				
R_k	-.11	.35	.32	1.00			
X_k	-.04	.06	.06	.05	1.00		
ED_k	.06	.11	.20	.16	.05	1.00	
Y_c	-.04	.10	.15	.13	.07	.17	1.00

TABLE C-3

Zero-Order Correlation Matrix - Middle Income

	$\Sigma A_{i,k}$	AY_k	SAT_k	R_k	X_k	ED_k	Y_c
$\Sigma A_{i,k}$	1.00						
AY_k	-.15	1.00					
SAT_k	.22	.04	1.00				
R_k	-.07	.14	.18	1.00			
X_k	-.06	.03	.02	.01	1.00		
ED_k	.02	.18	.16	.11	-.00	1.00	
Y_c	-.04	.13	.06	.01	.06	.14	1.00

TABLE C-4

Zero-Order Correlation Matrix - High Income

	$\Sigma A_{i,k}$	AY_k	SAT_k	R_k	X_k	ED_k	Y_c
$\Sigma A_{i,k}$	1.00						
Ay_k	-.12	1.00					
SAT_k	.10	.01	1.00				
R_k	-.05	.02	.06	1.00			
X_k	.08	-.03	.06	.02	1.00		
ED_k	-.01	.00	.23	.06	-.04	1.00	
Y_c	-.02	.07	.19	.02	-.03	.15	1.00

Appendix VIII-D

Parental Contribution Function: Alternate Specifications

List of Tables

TABLE

D-1 Non-Linear Effects in the Parental Contribution Equations

TABLE D-1

Non-Linear Effects in the Parental Contribution Equations[a]

(Underlined coefficient significant at .05 level; standard errors are in parentheses)

EXPLANATORY VARIABLES		DEPENDENT VARIABLE				
		PC_k (1.1)	PC_k (1.2)	PC_k (1.3)	PC_k (1.4)	PC_k (1.5)
Total Aid	$\Sigma A_{i,k}$	-.2746 (.0096)	-.2895 (.0095)	-.2789 (.0097)	-.2751 (.0096)	-.2752 (.0096)
Available Income	AY_k	.0769 (.0024)		.0764 (.0024)	.0762 (.0024)	.0772 (.0024)
	$(AY_k)^2$		.0847 (.0025)			
SAT Score	SAT_k	.5508 (.0288)	.5939 (.0286)		.5450 (.0288)	.5502 (.0289)
	$(SAT_k)^2$			3.640 (.1826)		
Racial/Ethnic Group	R_k	-142.6 (25.68)	-20.30 (25.22)	-135.8 (25.55)	-137.3 (25.63)	-143.1 (25.68)
Student Sex	X_k	-146.3 (16.10)	-131.9 (16.00)	-151.3 (16.09)	-145.0 (16.08)	-145.7 (16.10)
Parental Education	ED_k	37.26 (3.18)	38.42 (3.14)	36.30 (3.185)		37.53 (3.18)
	$(ED_k)^2$				146.1 (11.43)	
Community Income	Y_c	.0105 (.0019)	.0105 (.0019)	.0103 (.0019)	.0103 (.0019)	
	$(Y_c)^2$					.0029 (.0006)
Constant		80.22	-39.07	270.6	310.0	158.8
R^2 F		.28 (664.24)	.29 (689.21)	.27 (670.54)	.28 (669.45)	.28 (663.91)

---

[a] All squared terms in $(100)^2$ except $(ED_k)^2$, which is in $(10)^2$.

CHAPTER IX

THE EFFICACY OF STUDENT FINANCIAL AID FOR PUBLIC POLICY

As the major Federal short-run policy instrument for implementing national postsecondary education goals, student financial aid has generated much controversy. Its efficacy has been both touted and minimized, although only conflicting, often sketchy evidence can be marshalled to support either view.

The purpose of this study is to improve the understanding of the linkages among student aid, institutional decision making, and family expenditure decisions. Two specific policy-related questions are considered. First, how is financial aid packaged to students? What student, family, and/or institutional factors appear to influence the amount and composition of the financial aid package? Second, what is the effect of financial aid on actual parental contributions for educational costs? Even limited answers to these questions extend available information and permit an evaluation of the effects of student assistance efforts. Further, the methods and findings of this study can serve to guide future research.

The several issues related to the packaging and receipt of student financial assistance are probed using the National Longitudinal Study of the High School Class of 1972. The NLS is one of the most recent and detailed national probability samples available. To permit the study of institutional effects, each student's record contains measures of median family income, median SAT score, revenues, and student aid funds at postsecondary institutions considered and/or attended. The compilation of institutional data and the merging of the student and institutional files represent a major product of this project -- one that enhances the potential uses of the NLS file for a wide variety of research purposes.

A. The Role of Student Financial Aid

The presumed influences on the packaging of financial aid and the parental contribution for educational expenses are deduced from a broader framework of institutional and household decision making.

Following an analytical framework based on the economic theory of the firm, a model of institutional behavior is developed in Chapter III in which postsecondary institutions are presumed to attempt to maximize their own and national objectives. In the model, student aid offers and awards are used to attract potential students with attributes that would enhance these objectives. Offers and awards are made subject to financial and enrollment constraints.

In the conceptual framework for analyzing family spending behavior, presented in Chapter VII, family outlays for postsecondary education are presumed to be viewed by the family as an investment and are hypothesized to depend on the attractiveness of the investment to the parents and student. Factors which affect the attractiveness of the investment include, among others, student ability and parental education attainment. Just as important are characteristics which indicate the capacity of the parents and student to contribute toward educational costs, such as family income, student income, family size, and student assistance.

B. Major Findings and Policy Implications

The empirical results suggest the nature and extent of student aid effects on several presumed national goals.

1. The Packaging of Student Financial Aid

Several interesting and useful results emerge from the examination of the packaging of student aid for entering full-time freshmen in 1972-73. First, financial aid packages reflect at least the limited commitment on the part of student aid donors -- Federal, state, local, institutional, and private -- to equal educational opportunity. Based on data supplied by 1972-73 entering full-time freshmen in the NLS, family income and minority status strongly influenced the amount and type of aid received. Notably, aid from Federal programs tended to be more targeted on lower income and minority students than aid from other programs.

To illustrate, freshmen from families with incomes ten percent less than average received 18 percent more financial aid dollars and 22 percent larger grant and scholarship awards. These same students reported a 20 percent larger Federal aid component with a 35 percent greater Educational Opportunity Grant. Similar results emerged for minority freshmen (Chapter VI, Tables 2, 5, 11, and 12). Since 60 percent of all Federally-aided freshmen also received non-Federal aid, these findings suggest the potential effect of Federal aid in attracting non-Federal student aid funds to the Federally targetted student. If true, Federal aid programs may carry a "multiplier" effect which is not apparent with viewing distributions of Federal aid alone.

Further, observed differences in targeting aid across institutional sectors suggests there is potential for improving price efficiency in higher education through student aid. Although aid within each sector favored lower income students, financial aid to freshmen at private four-year colleges was more sensitive to differences in family income than was aid received by public college students (Chapter VI, Tables 3 and 4). Even greater targeting of student aid in the public sector would not only partly increase price efficiency; it would also foster equal educational opportunity goals.

Second, an implicit goal of equal choice among postsecondary education options appeared to be fostered in 1972-73. From the analysis of aid packages, student costs of attendance emerged as an important determinant of the amount and composition of aid received. Notably, the amounts of student aid received by freshmen at public two-year colleges were responsive to variations in student costs (Chapter VI, Tables 2 and 4). Simply, many public two-year freshmen could not meet greater costs without additional support.

This finding suggests that the half cost limitation in the burgeoning Basic Grant program, which applies almost exclusively to these students, may paradoxically be limiting aid to those whose packages, by necessity, must be most responsive to variations in costs. To be more sensitive to these differences, the half cost provision should be eliminated from the Basic Grant award calculation. For those concerned with the possibility of a Basic Grant award meeting the entire costs of attendance, two alternatives offer a more equitable compromise. Awards could be limited to three-fourths of cost or, better still, to costs minus some fixed dollar ("self-help") component.

Third, all financial aid tends to favor more talented high school graduates and, therefore, to provide a limited encouragement to their postsecondary education enrollments. From the NLS data, a student with SAT scores ten percent above the average recorded a 9 percent larger than average amount of gift aid than average while receiving 4 percent less than the average term-time earnings (Chapter VI, Tables 5 and 6). Notably, Federal aid was weakly associated with student achievement/ability (Chapter VI, Table 11). Nevertheless, the packaging of aid from all sources tended to favor the more talented students (Chapter IV, Table 2; Chapter VI, Table 2). This finding suggests that a Federal merit-based aid program may not be necessary, since the potential recipients are being served, in part, through non-Federal aid sources.

As important, at least in 1972-73, the use of merit awards to attract freshmen across broadly similar institution groups was not evident. Highly selective institutions tended to reward the talented high school seniors with relatively more aid and relatively larger grant and scholarship awards than less selective institutions, but the differences were not very great. Moreover, highly and moderately selective four-year institutions appeared to package gift aid similarly (Chapter VI, Tables 2, 4, 5, 8).

A finding of interest, the institutional commitment of resources to student aid exhibited a weak effect on the packaging of aid (Chapter IV, Table 10; Chapter VI, Table 2). Surprisingly, even within two Federal campus-based aid programs (EOG and CWS) which specifically call for institutional matching, the size of the awards were marginally influenced by the level of institution maintenance of effort funds (Chapter IV, Tables 11, 12, and 13; Chapter VI, Tables 12 and 13). Apparently, the matching fund requirements were so modest and/or campus-based Federal aid accounted for such a small share of available student aid resources that the influence of the level of institutional funds on packaging was negligible.

E. The Effects of Student Aid on Parental Contributions

From the examination of the effects of student aid on parental support, a number of results should be noted.

First, student aid substitutes, but only partly, for parental spending. In this sense, the aid is not purely redistributive; it has important allocation effects as well. Significantly, financial aid substituted least for parental contributions from low income and minority families (Chapter VIII, Figures 1 and 3).

Second, the extent of the substitution for parental support differed among types of aid. Holding total aid fixed, an increase in the grant and scholarship aid component induced a smaller substitution for parental support only among low income families. Within higher income groups, student loan aid substituted less, and term-time earnings more, for the parental contribution than did all aid (Chapter VIII, Table 7).

Taken together, these results suggest an "efficient" pacakging strategy of more total aid composed of relatively greater amounts of gift aid to low income and minority students and less total aid, with relatively greater amounts of loan aid, to higher income students. Such a strategy would tend to minimize the substitution of financial aid for parental contributions.

The empirical tests of the parental contribution function led to other conclusions. 1) Parents of minority and female as well as talended freshmen tended to contribute more toward educational expenses (Chapter VIII, Table 5). In part, the former results could reflect a perception of the improving employment prospects for minority and female college graduates, perhaps due to affirmative action initiatives (Chapter VIII, Table 5). 2) Parental knowledge about postsecondary education alternatives, as measured by the educational attainment of the parents significantly influenced the level of parental support (Chapter VIII, Table 5). Since low income families are likely to be headed by parents with limited knowledge (educational attainment), additional, disproportionate financial inducements may be required to promote equality of access and choice.

Not only counseling programs at high schools, but also additional financial incentives -- via student aid in the sort run -- will be necessary to overcome the information and education gap within these households.

C. Concluding Note

The results of this study, and the implications for Federal student assistance efforts, must be viewed with some care and caution. As in any undertaking of this nature, data limitations temper the strength of the conclusions. Two limitations should be noted. First, somewhat severe reporting and missing data problems required manipulations of the survey responses and a re-weighting of the subsample. By themselves, these adjustments do not correct for the gaps and errors. Rather, they reflect a best judgement in attempting to compensate for the biases which could result. Second, the student data refer primarily to the pre-BEOG academic year of 1972-73. Available student aid, particularly Federal aid, has mushroomed since that year. Office of Education need-based grant aid alone increased nearly 800 percent in the intervening four years. These are not marginal changes. Hence, the direct application of the study results to current conditions will be limited.

Still, the more basic result is not altered. Student aid does affect institutional and family decision making in several key ways. To the extent that the study methods and results help to illuminate these effects, the promise and limits of student aid in achieving equal education opportunity and other national goals will be better understood.

Appendix A

List of Variables and Data Sources

LIST OF VARIABLES AND DATA SOURCES

A. Financial Aid Variables

$A_{i,k}$ = i^{th} type of financial aid offered and awarded to individual student k (NLS First Follow-Up, question 47)

$A_{1,k}$ = RECEIPT = receipt of aid:

1 = any aid (non-zero amounts in at least one of lines 2, 3, 7 through 25, 28, 29, or 30).

0 = no aid

$A_{2,k}$ = TOTALAID = dollar amount of all financial aid received (lines 2 plus 3, plus lines 7 through 14 or line 28, plus lines 15 through 20 or line 29, plus lines 21 through 25 or line 30).

$A_{3,k}$ = GRANT = dollar amount of grant and scholarship aid. Sum of all grant and scholarship funds received from specific programs. (lines 7 through 14, or line 28).

$A_{4,k}$ = WORK = dollar amount of earnings reported from job held during school year (sum of lines 2 and 3).

$A_{5,k}$ = LOAN = dollar amount of proceeds from all loans used to meet educational expenses (sum of lines 15 through 20, or line 29).

$A_{6,k}$ = BENEFIT = dollar amount of funds received from Federal and State income transfer programs, including VA, Social Security and Welfare benefits (sum of lines 21 through 25, or line 30).

$A_{7,k}$ = FEDAID = dollar amount of Federal aid (sum of lines 2, 7, 8, 10, 11, 12, 15, 16, 18, 19, 20, and $A_{6,k}$).

$A_{8,k}$ = FEDGRT = dollar amount of all grant and scholarship aid reported from Federal sources. Includes SEOG (BEOG), ROTC, Nursing, or Health Professions scholarships (sum of lines 7, 8, 10, 11, and 12).

$A_{9,k}$ = FEDWRK = dollar amount of earnings from Federal College Work-Study programs (line 2).

$A_{10,k}$ = FEDLOAN = dollar amount of proceeds from Federal loan programs. Includes FISL and State loans, NDSL, Nursing or Health Professions loans (sum of lines 15, 16, 18, 19, and 20).

$A_{11,k}$ = PACKAGE = composition of financial aid package (compares $A_{3,k}$ through $A_{6,k}$).

0 = no aid

1 = grant only (only $A_{3,k} > 0$)

2 = work only (only $A_{4,k} > 0$)

3 = loan only (only $A_{5,k} > 0$)

4 = benefits only (only $A_{6,k} > 0$)

5 = grant and work (only $A_{3,k} > 0$ and $A_{4,k} > 0$)

6 = grant and loan (only $A_{3,k} > 0$ and $A_{5,k} > 0$)

7 = grant and benefits (only $A_{3,k} > 0$ and $A_{6,k} > 0$)

8 = work and loan (only $A_{4,k} > 0$ and $A_{5,k} > 0$)

9 = work and benefits (only $A_{4,k} > 0$ and $A_{6,k}$)

10 = loan and benefits (only $A_{5,k}$ > and $A_{6,k} > 0$)

11 = grant, work, and loans (only $A_{3,k} > 0$, $A_{4,k} > 0$, and $A_{5,k} > 0$)

12 = grant, work, and benefits
(only $A_{3,k} > 0$, $A_{4,k} > 0$, and $A_{6,k} > 0$)

13 = grant, loan, and benefits
(only $A_{3,k} > 0$, $A_{5,k} > 0$, and $A_{6,k} > 0$)

14 = work, loan, and benefits
(only $A_{4,k} > 0$, $A_{5,k} > 0$, and $A_{6,k} > 0$)

15 = all types
($A_{3,k} > 0$, $A_{4,k} > 0$, $A_{5,k} > 0$, and $A_{6,k} > 0$)

$A_{12,k}$ = AIDSOURCE = source of aid:

0 = no aid

1 = Federal aid only
($A_{7,k}$ is non-zero and equal to $A_{2,k}$).

2 = Federal and non-Federal aid
($A_{7,k}$ is non-zero and less than $A_{2,k}$).

3 = non-Federal aid only
($A_{7,k}$ is zero and $A_{2,k}$ is non-zero).

$A_{13,k}$ = EOG = dollar amount of Educational Opportunity Grant (amount in line 8).

$AO_{i,h,k}$ = i^{th} type of financial aid offered by the institution alternative h to individual student k (NLS First Follow-Up, questions 82 to 84).

$AO_{1,h,k}$ = RECEIPT = receipt of offer

1 = any offer (for institution alternatives, a non-zero amount for any item in 82d, 83d, and 84d).

0 = no aid

$AO_{2,h,k}$ = TOTAL AID = dollar amount of all financial aid offered (for institution alternatives, the sum of amounts for all items in 82d, 83d, and 84d).

$AO_{3,h,k}$ = GRANT = dollar amount of grant and scholarship aid offered by institution h (for institution alternatives, the amount reported in the "scholarship" item in 82d, 83d, and 84d).

$AO_{4,h,k}$ = WORK = dollar amount of term-time work aid offered by institution h (for institution alternatives, the amount reported in the "promised job" item in 82d, 83d, and 84d).

$AO_{5,h,k}$ = LOAN = dollar amount of loan aid offfered by institution h (for institution alternatives, the amount reported in the "loan" item in 82d, 83d, and 84d).

B. Family/Student Variables

Y_k = parents' income, as reported by student in BSYRQ89. Income is taken to be mid-point of interval. Incomes are deflated to 1972 dollars by 12% for those providing income data in the Fall of 1973 on the Form B Follow-Up (see U.S. Department of Commerce (1974)).

$Y_{k,q}$ = parents' income quartile, established by responses to BSYRQ89.

1 = Less than \$7,500

2 = \$7,500 to \$10,500

3 = \$10,500 to \$15,000

4 = over \$15,000

Y_c = median community income, included as interval estimate on the NLS Master File. Point estimates are taken as mid-points of intervals.

$Y_{c,q}$ = median community family income quartile

1 = Less than \$7,500

2 = \$7,500 to \$10,500

3 = \$10,500 to \$15,000

4 = over \$15,000

SAT_k = student academic achievement/ability, measured by SAT-equivalent test scores. Where no SAT score is present, SAT-equivalent of ACT score (from Chase and Barritt (1966)) or NLS Test Book Scores (from R. Jackson (1976)) is calculated

$SAT_{k,q}$ = achievement/ability quartiles, developed from Radner and Miller (1976) and Froomkin (1975).

1 = Less than 800

2 = 800 to 950

3 = 950 to 1100

4 = over 1100

R_k = racial/ethnic group, as reported by respondents in NLS survey

1 = American Indian

2 = Black

3 = Mexican American

4 = Puerto Rican

5 = Other Latin

6 = Asian American

7 = White

8 = Other

$R_{k,c}$ = condensed racial/ethnic identification:

1 = White

2 = Black

3 = Other

X_k = student sex

1 = Male

2 = Female

$(TC_k - \hat{F}C_k)$ = UNEED = Unmet need, defined as total costs of attendance TC_k less expected family contribution, $\hat{FC}_k$, constrained to be greater than zero.

TC_k = total costs of attendance, including stated tuition and fees, room and board, transportation, books and supplies, and miscellaneous expenses.

$\hat{FC}_k$ = expected family contribution, as simulated from CSS need analysis methodology. Sum of expected parents contribution (PC_k) plus student contribution ($400 from Freshman men, $300 from Freshman women).

AY_k = available income, as simulated from CSS need analysis methodology. Response to BSYRQ93, using income interval mid-points. Assumes 10 percent of assets are available as income "supplement." Net worth estimated at $1,000 for every $1,000 of income. Deduct family size offets (CSS (1971), p. 5-4), and Federal tax according to BSYRQ85A. Deduct $600 per "other" dependent, using response to BSYRQ85B.

PC_k = actual parental contribution, from FFUQ47, line 4. Increased in the amount of $80 per month to reflect in-kind parental support for room and board, if these costs are not reported by the student.

N_k = siblings dependent on parents or guardian, BSYRQ85A.

$N_{c,k}$ = siblings enrolled college, BSYRQ87.

ED_k = educational attainment of parents in years (attainment of mother or female guardian used if education of father or male guardian not present). Response to FFUQ78, converted to years as follows:

Code		Years of Education
1	=	8
2	=	10
3	=	12
4	=	13
5	=	14
6	=	14
7	=	16
8	=	18
9	=	20

C. Institution Variables

ITYP = institution type and control. An augmented institutional classification scheme, tapping the HED, Carnegie, Tripartite, and NLS coding.

1 = Public University (HED)
2 = Public Four Year I (HED + Carnegie LE 22)
3 = Public Four Year II (HED + Carnegie GT 22)
4 = Public Two Year (HED)
5 = Private University (HED)
6 = Private Four Year I (HED + Carnegie LE 22)
7 = Private Four Year II (HED + Carnegie GT 22)
8 = Private Two Year (HED)
9 = Profit-Making (Tripartite)
10 = Vocational (Tripartite)
11 = Other (Tripartite)

Y_s = median adjusted gross family income of undergraduate students at the institution attended. Calculated from 1973-74 data supplied by the institution on the Tripartite application (USOE (1972)), Section III, Part A. The mid-point of each income interval was used as a point estimate, weighted by actual undergraduate enrollments in each interval (part-time students are counted as one-third of a full-time enrollment). The resulting income estimate is deflated to 1972 dollars by 12% (see U.S. Department of Commerce (1974)).

$Y_{s,q}$ = median institution family income quartile.

1 = Less than $7,500
2 = $7,500 to $10,500
3 = $10,500 to $15,000
4 = over $15,000

SAT_s = median student academic achievement/ability of undergraduate students at the institution attended, as reported to ACE by postsecondary institutions (ACE (1974)). Measured by SAT-equivalent test scores. Where no SAT score is available, SAT equivalent of ACT score (from Chase and Barritt (1966)) is calculated.

$SAT_{s,q}$ = median institution achievement/ability quartiles, developed from Radner and Miller (1975) and Froomkin (1975).

1 = Less than 800 or no score

2 = 800 to 950

3 = 950 to 1100

4 = over 1100

R_h = Institution racial/ethnic group, from HED (NCES (1974b)).

1 = predominantly white

2 = predominantly Black

X_h = Institution sex, from HED (NCES (1974b)).

1 = men

2 = women

3 = coed

INST = Total resources allocated for instructional purposes per weighted FTE. Total resources taken from HEGIS (NCES (1974c)), Part A, Section I, items A, B, C, and D.

TF = Stated tuition and fees per weighted FTE, from HED (NCES (1974b)). Where institution-reported tuition and fees are not present, student response to FFUQ46BA, converted to 9 month basis, is used.

G = Federal, state, and local government subsidy per weighted FTE. Total amount of subsidy from HEGIS (NCES (1974c)). Part A, Section I, item B.

I = Endowment income per weighted FTE. Total amount of income from HEGIS (NCES (1974c)), Part A, Section I, item C.

P = Private gifts and bequests per weighted FTE. Total amount of dollars from HEGIS (NCES (1974c)), Part A, Section I, item D.

B_i = total student aid budget for the i^{th} type of financial aid, per weighted FTE.

B_1 = DISCFUND = institutional discretionary student aid funds per weighted FTE. Total amount of funds taken from Tripartite application (USOE (1972)), Section I, item 26 or 29. Institution-reported "maintenance of effort" funds are used. These do not include any aid not controlled by the institution, such as state scholarships, Social Security, and VA payments, and the Federal share of CWS and NDSL disbursements. For institutions which did not participate in the Federal CWS or EOG programs, DISCFUND is the sum of student aid grant expenditures from HEGIS (NCES (1974c)), Part B, Section II) plus the institution's share of NDSL disbursements (USOE (1972)).

B_2 = CWSFUND = 1972-73 institutional gross compensation to students per weighted FTE. Amount of funds taken from institution's Tripartite application (USOE (1972)), Section III, Part B, item 57b.

B_3 = NDSLFUND = 1972-73 approved level of NDSL lending per weighted FTE. Amount of funds taken from institution's Tripartite application (USOE (1972)), Section III, Part B, item 59b.

B_4 = INITEOG = 1972-73 initial year EOG disbursements per weighted FTE. Amount of funds taken from institution's Tripartite application (USOE (1972)), Section III, Part B, item 56b.

FTE = weighted undergraduate full-time equivalent enrollment, from NCES (1974a). Calculated according to the following formula:

$$\text{WTDFTE} = 1.0^{*}\,(\text{FTU} + .33\text{PTU}) + 2.5^{*}(\text{FTG} + .33\text{PTG})$$

where,

WTDFTE = weighted undergraduate full-time equivalent enrollment

FTU = full-time undergraduate enrollmemt

PTU = part-time undergraduate enrollment

FTG = full-time graduate enrollment

FTG = part-time graduate enrollment

Missing undergraduate and all graduate enrollments taken from Tripartite application (USOE (1972)), Section II. Graduate total enrollments converted to 1972-73 graduate FTE'S by applying a factor of .7.

O.M.B. No. 51-S-72008
APPROVAL EXPIRES 1-31-73

Base-Year Instrument (selected parts)

Dear High School Senior:

Thank you for accepting the invitation to participate in the NATIONAL LONGITUDINAL STUDY OF THE HIGH SCHOOL CLASS OF 1972. The answers you and other students provide will help in the continuing effort to plan new and better school programs for future students across the United States.

NATIONAL LONGITUDINAL STUDY OF THE HIGH SCHOOL CLASS OF 1972

Student Questionnaire

SCHOOL CODE

STUDENT NUMBER

LAST NAME

FIRST NAME

M.I.

(omitted)

Prepared for the
UNITED STATES OFFICE OF EDUCATION
BY EDUCATIONAL TESTING SERVICE ☐ PRINCETON, NEW JERSEY
SPRING 1972

OE FORM 2348, 2/72

School Code ☐☐☐☐ **Student Number** ☐☐ (omitted)

Sex (Circle one.)

Male	1
Female	2

Date of Birth		
Mo.	**Day**	**Year**

(omitted)

Please complete the information above.

A SECTION Your high school experiences . . .

Please answer every question unless you are asked to skip to another one. You may omit any question that you or your parents would consider objectionable.

BSYRQ1 **1. When do you expect to graduate from high school?**

(Circle one.)

I will leave high school before I graduate	1
Now through June 1972	2
July or August 1972	3
September 1972 through January 1973	4
February through June 1973	5
After June 1973	6

BSYRQ2 **2. Which of the following best describes your present high school program?**

(Circle one.)

General	1
Academic or college preparatory	2
Vocational or technical:	
Agricultural occupations	3
Business or office occupations	4
Distributive education	5
Health occupations	6
Home economics occupations	7
Trade or industrial occupations	8

K
START

K SECTION For everyone . . .

Please answer every question unless you are asked to skip to another one. You may omit any question that you or your parents would consider objectionable.

BSYRQ81 **81. If there were no obstacles, what would you most like to be doing during the year after you leave high school?**

(Circle one.)

Working full-time	01
Entering an apprenticeship or on-the-job training program	02
Going into regular military service or to a service academy	03
Being a full-time homemaker	04
Attending a vocational, technical, trade, or business school	05
Taking *academic courses* at a junior or community college	06
Taking *technical or vocational subjects* at a junior or community college	07
Attending a four-year college or university	08
Working part-time	09
Other (travel, take a break, no plans)	10

BSYRQ82 **82. Are you a veteran of the U. S. armed services?**

(Circle one.)

No	1
Yes	2

BSYRQ83 **83. Do you have a physical condition that limits the kind or amount of work you can do on a job?**

(Circle one.)

No	1
Yes	2

BSYRQ84 **84. How do you describe yourself?**

(Circle one.)

American Indian	1
Black or Afro-American or Negro	2
Mexican-American or Chicano	3
Puerto Rican	4
Other Latin-American origin	5
Oriental or Asian-American	6
White or Caucasian	7
Other	8

K

CONTINUED

85. How many of your brothers and sisters and other persons are dependent on your parents or guardian for financial support?

(Circle one number in each column.)

	Brothers and sisters	**Other persons**
None	0	0
One	1	1
Two	2	2
Three	3	3
Four	4	4
Five	5	5
Six or more	6	6
	BSYRQ85A	BSYRQ85B

BSYRQ86 **86. How many persons other than yourself are dependent on you for financial support?**

(Circle one.)

None	0
One	1
Two or more	2

BSYRQ87 **87. How many of your brothers or sisters will be in college next fall?**

(Circle one.)

None	0
One	1
Two	2
Three	3
Four or more	4

BSYRQ88 **88. Is English the language spoken most often in your home?**

(Circle one.)

No	1
Yes	2

BSYRQ89 **89. How long have you lived in the community in which you now live?**

(Circle one.)

All my life	1
Ten or more years	2
Five to ten years	3
Three to four years	4
One to two years	5
Less than one year	6

90. What was the highest educational level each of the following persons completed? If you are not sure, please give your best guess.

(Circle one number in each column.)

	Father or male guardian	**Mother or female guardian**	**Oldest brother or sister**
Doesn't apply	1	1	1
Did not complete high (secondary) school	2	2	2
Finished high school or equivalent	3	3	3
Adult education program	4	4	4
Business or trade school	5	5	5
Some college	6	6	6
Finished college (four years)	7	7	7
Attended graduate or professional school (for example, law or medical school), but did not attain a graduate or professional degree	8	8	8
Obtained a graduate or professional degree (for example, M.A., Ph.D., or M.D.)	9	9	9
	BSYRQ90A	BSYRQ90B	BSYRQ90C

91. As far as you know, how much schooling do your father and mother (or guardian) want you to get?

(Circle one number in each column.)

	Father or male guardian	**Mother or female guardian**
Wants me to quit high school without graduating	1	1
Wants me to graduate from high school and stop there	2	2
Wants me to graduate from high school and then go to a vocational, technical, trade, or business school	3	3
Wants me to go to a two-year or junior college	4	4
Wants me to go to a four-year college or university	5	5
Wants me to go to a graduate or professional school after graduating from four-year college or university	6	6
I don't know	7	7
	BSYRQ91A	BSYRQ91B

BSYRQ92 **92. What religion were you brought up in?**

(Circle one.)

Protestant	1
Roman Catholic	2
Other Christian	3
Jewish	4
Other (for example, Eastern religions)	5
None	6

K
CONTINUED

BSYRQ93 **93. What is the approximate income before taxes of your parents (or guardian)? Include taxable and non-taxable income from all sources.**

(Circle one.)

Less than $3,000 a year (about $60 a week or less) 01
Between $3,000 and $5,999 a year (from $60 to $119 a week) 02
Between $6,000 and $7,499 a year (from $120 to $149 a week) 03
Between $7,500 and $8,999 a year (from $150 to $179 a week) 04
Between $9,000 and $10,499 a year (from $180 to $209 a week) 05
Between $10,500 and $11,999 a year (from $210 to $239 a week) 06
Between $12,000 and $13,499 a year (from $240 to $269 a week) 07
Between $13,500 and $14,999 a year (from $270 to $299 a week) 08
Between $15,000 and $18,000 a year (from $300 to $359 a week) 09
Over $18,000 a year (about $360 a week or more) 10

94. Which of the following do you have in your home?

(Circle one number on each line.)

		Have	**Do not have**
BSYRQ94A	A specific place for study	1	2
BSYRQ94B	Daily newspaper	1	2
BSYRQ94C	Dictionary	1	2
BSYRQ94D	Encyclopedia or other reference books	1	2
BSYRQ94E	Magazines	1	2
BSYRQ94F	Record player	1	2
BSYRQ94G	Tape recorder or cassette player	1	2
BSYRQ94H	Color television	1	2
BSYRQ94I	Typewriter	1	2
BSYRQ94J	Electric dishwasher	1	2
BSYRQ94K	Two or more cars or trucks that run	1	2

BSYRQ95 **95. Which best describes the location of the place in which you live?**

(Circle one.)

In a rural or farming community 1
In a small city or town of fewer than 50,000 people that is not a suburb of a larger place 2
In a medium-sized city (50,000-100,000 people) 3
In a suburb of a medium-sized city 4
In a large city (100,000-500,000 people) 5
In a suburb of a large city 6
In a very large city (over 500,000 people) 7
In a suburb of a very large city 8

O.M.B. No. 51-S-73030
APPROVAL EXPIRES 9-1-74

OPERATION FOLLOW-UP
(selected parts)

NATIONAL LONGITUDINAL STUDY OF THE HIGH SCHOOL CLASS OF 1972

First Follow-Up Questionnaire

Form B

Prepared for the
UNITED STATES OFFICE OF EDUCATION
BY RESEARCH TRIANGLE INSTITUTE · RESEARCH TRIANGLE PARK, NORTH CAROLINA
FALL 1973

OE FORM 2367, 9/73
MRC 3400

Section A — General Information

1. **What are you doing now?**

(Circle one number on each line.)

		Applies to me	**Does not apply to me**
FFUQ1A	Working for pay at a full-time or part-time job	1	2
FFUQ1B	Taking vocational or technical courses at any kind of school or college (for example, vocational, trade, business, or other career training school)	1	2
FFUQ1C	Taking academic courses at a two- or four-year college	1	2
FFUQ1D	On active duty in the Armed Forces (or service academy)	1	2
FFUQ1E	Homemaker	1	2
FFUQ1F	Temporary lay-off from work, looking for work, or waiting to report to work	1	2
FFUQ1G	Other (please describe:____________________)	1	2

FFUQ2 2. **Did you complete high school?**

(Circle one.)

No, still in high school	1—*(SKIP to q. 4)*
No, left high school without completing	2
Yes, graduated	3
Yes, left high school without graduating but have since passed a high school equivalency test, for example, the GED	4

3. **When did you leave or graduate from the last high school that you attended?**

Date left: FFUQ3A (month) FFUQ3B (year)

FACTS ABOUT YOU IN OCTOBER 1973

FFUQ4 4. **With whom did you live, as of the first week of October 1973?**

(Circle one.)

By myself	1
Parents	2
With husband or wife	3
With other relatives	4
With person(s) not related to me	5

FFUQ5 5. **How would you describe your living quarters, as of the first week of October 1973?**

(Circle one.)

Private house or apartment	1
Dormitory or apartment operated by a school or college	2
Fraternity or sorority house	3
Rooming or boarding house	4
Other (please describe:____________________)	5

SCHOOL ATTENDANCE IN OCTOBER 1972

FFUQ29A **29a. Now please think back a year to the Fall of 1972. Were you taking classes or courses at any school during the month of October 1972?**

Yes .... 1 — *(SKIP to q. 30)*
No 2

29b. Here are some reasons others have given for NOT continuing their formal education right after leaving high school. Which of these reasons apply to you?

(Circle one number on each line.)

		Applies to me	Does not apply to me
FFUQ29BA	Needed to earn money to support my family	1	2
FFUQ29BB	Needed to earn money before I could pay for further education	1	2
FFUQ29BC	Could not afford a four-year college or university education	1	2
FFUQ29BD	Failed to find out in time about admission requirements, cost of attending, availability of a school in the area, etc.	1	2
FFUQ29BE	Poor high school grades or poor scores on college admission tests	1	2
FFUQ29BF	Lack of high school credits required for college entrance	1	2
FFUQ29BG	Applied to one or more schools, but was not accepted	1	2
FFUQ29BH	Lack of a school within commuting distance of my home	1	2
FFUQ29BI	Discouraged from continuing by teachers or counselor	1	2
FFUQ29BJ	Discouraged from continuing by parents	1	2
FFUQ29BK	Wanted to enter Armed Forces	1	2
FFUQ29BL	My plans did not require more education	1	2
FFUQ29BM	Wanted to take a break	1	2
FFUQ29BN	Planned to be married	1	2
FFUQ29BO	School is not for me; I don't like it	1	2
FFUQ29BP	Offered a job I wanted	1	2
FFUQ29BQ	Wanted to earn money for myself	1	2
FFUQ29BR	Wanted practical experience before going on to school	1	2

SKIP to q. 39, page 12 →

FFUQ30 **30. Was the school you attended in October 1972 the same school you attended in the first week of October 1973? (Circle one.)**

Yes .... 1 — *(SKIP to q. 33b)* } *Next page* →
No, not enrolled in October 1973 .... 2 — *(SKIP to q. 32a)* }
No, enrolled in different school 3

31. What were your reasons for changing schools? **(Circle one number on each line.)**

		Applies to me	Does not apply to me
FFUQ31A	My interest changed, and my former school did not offer the course of study I wanted	1	2
FFUQ31B	Wanted to attend a less expensive school	1	2
FFUQ31C	My grades were too low to continue at the former school	1	2
FFUQ31D	Wanted to be at a smaller school	1	2
FFUQ31E	Wanted to be at a larger school	1	2
FFUQ31F	Wanted to attend school closer to home	1	2
FFUQ31G	Wanted to attend a school farther away from home	1	2
FFUQ31H	Wanted to attend a school that would give me better career opportunities	1	2
FFUQ31I	Wanted to attend a school where I could feel more like I belonged	1	2
FFUQ31J	Wanted to attend a school where I could maximize my intellectual and personal development	1	2
FFUQ31K	More group or social activities of interest	1	2

32a. What is the exact name and location of the school you were attending in the month of October 1972? (Please print and do not abbreviate.)

(omitted)
School Name: ______________________
City: ______________________ State: __________

FFUQ32B **32b. What kind of school is this?**

(Circle one.)

Vocational, trade, business or other career training school 1
Junior or community college (two-year) 2
Four-year college or university 3
Other (please describe: ______________________) 4

FFUQ32C **32c. Is this school public or private?**

Public 1
Private 2

33a. When did you first attend this school? FFUQ33AA **(month)** FFUQ33AB **(year)**

FFUQ33B **33b. During October 1972, were you classified by this school as a full-time student?**

Yes 1
No 2

33c. About how many hours a week did your classes meet in the subjects or courses in which you were enrolled at that time? Include time in lectures, shop, laboratories, etc.

FFUQ33C Hours per week

FFUQ34 **34. Was your field of study or training area in October 1972 the same as you indicated for the first week of October 1973?**

(Circle one.)

Yes .... 1 — *(SKIP to q. 39, page 12)* →
No, wasn't enrolled in October 1973 .... 2 } — *(SKIP to q. 36a) Next page* →
No, none indicated for October 1973 .... 3 }
No, different than in October 1973 4

35. Listed below are some reasons why students change fields or training areas. What were the reasons in your situation?

(Circle one number on each line.)

		Applies to me	**Does not apply to me**
FFUQ35A	Courses more difficult than I expected	1	2
FFUQ35B	Met people with new ideas	1	2
FFUQ35C	Poor advice on original choice	1	2
FFUQ35D	Lack of information on jobs related to original choice	1	2
FFUQ35E	Content of courses different from what I expected	1	2
FFUQ35F	New information about other fields of study or training areas	1	2
FFUQ35G	Interest aroused by courses	1	2
FFUQ35H	More jobs available for graduates in the field I changed to	1	2
FFUQ35I	Other (please specify: ______________________)	1	2

SCHOOL FINANCES

The purpose of this part is to learn how students pay for their training and education after leaving high school, so that financial aid programs can be changed to meet student needs better. The following questions apply to any training and education you received after leaving high school and before Fall 1973.

46a. About how much did training or schooling cost during the first year after high school, regardless of who paid? Give the expenses and the number of months you were in school or training during this period.

Total expenses $ FFUQ46AA Spent over how many months? FFUQ46AB

46b.* How was this money spent?

$ FFUQ46BA Tuition and fees
$ FFUQ46BB Room and board
$ FFUQ46BC Books and supplies
$ FFUQ46BD Transportation
$ FFUQ46BE Other related school expenses (clothing, laundry, etc.)

Combinations Code	Amount
FFUQ46BF	FFUQ46BG

(See manual for coding rules)

47. In paying for these costs, how much came from each of the following sources? (Please circle all that apply and write in the amounts.)

SAVINGS OR EARNINGS

Own savings or summer earnings .... 01 ($________)
College work-study programs .... 02 ($________)
Other earnings while taking courses .... 03 ($________)

INDIVIDUAL SUPPORT

Parents .... 04 ($________)
Husband or wife .... 05 ($________)
Other relatives or friends .... 06 ($________)

SCHOLARSHIPS OR GRANTS

Basic Educational Opportunity Grant Program .... 07 ($________)
Supplementary Educational Opportunity Grant Program .... 08 ($________)
College scholarship or grant from college funds .... 09 ($________)
ROTC scholarship or stipend .... 10 ($________)
Nursing Scholarship Program .... 11 ($________)
Health Professions Scholarship Program .... 12 ($________)
State scholarships .... 13 ($________)
Other scholarships .... 14 ($________)

LOANS

Federal Guaranteed Student Loan Programs .... 15 ($________)
State Loan Program .... 16 ($________)
Regular bank loan .... 17 ($________)
National Defense (Direct) Student Loan Program .... 18 ($________)
Health Professions Student Loan Program .... 19 ($________)
Nursing Student Loan Program .... 20 ($________)

OTHER

Law Enforcement Educational Program .... 21 ($________)
Veterans Administration War Orphans or Survivors Benefits Programs .... 22 ($________)
Veterans Administration direct benefits (GI Bill compensation or pension) .... 23 ($________)
Vocational Rehabilitation Program benefits .... 24 ($________)
Social Security Benefits (for students aged 18-22 who are children of retired, disabled, or deceased parents) .... 25 ($________)

Source Code	Amount
FFUQ47AA	FFUQ47AB
FFUQ47BA	FFUQ47BB
FFUQ47CA	FFUQ47CB
FFUQ47DA	FFUQ47DB
FFUQ47EA	FFUQ47EB
FFUQ47FA	FFUQ47FB
FFUQ47GA	FFUQ47GB

(See manual for coding rules)

Section E — Information About The Past

77. Have your (a) parents or guardians or have your (b) friends your own age either encouraged or discouraged you in doing the following things since you left high school?

(a) PARENTS OR GUARDIANS (Circle one number on each line.)

(b) FRIENDS YOUR OWN AGE (Circle one number on each line.)

	Encouraged	Discouraged	Both	Neither			Encouraged	Discouraged	Both	Neither
FFUQ77AA	1	2	3	4	Getting a job or going to work	FFUQ77BA	1	2	3	4
FFUQ77AB	1	2	3	4	Going to school for vocational or technical training	FFUQ77BB	1	2	3	4
FFUQ77AC	1	2	3	4	Going to college for an academic education	FFUQ77BC	1	2	3	4
FFUQ77AD	1	2	3	4	Getting married	FFUQ77BD	1	2	3	4
FFUQ77AE	1	2	3	4	Entering the Armed Forces	FFUQ77BE	1	2	3	4
FFUQ77AF	1	2	3	4	Traveling or taking a break	FFUQ77BF	1	2	3	4

78. What is the highest educational level completed by your mother and father? If you are not sure, please give your best guess.

(Circle one number on each line.)

		None or grade school only	High School		Vocational, trade, business, or career program in a school or college		Academic programs			
			Did not finish	Finished	Less than two years	Two years or more	Some college (including two-year degree)	Finished college (four-or five-year degree)	Master's degree or equivalent	Ph. D., M.D., or equivalent
FFUQ78A	**Father** or male guardian	1	2	3	4	5	6	7	8	9
FFUQ78B	**Mother** or female guardian	1	2	3	4	5	6	7	8	9

79. Please describe below the job most recently held by your father (or male guardian), even if he is retired, deceased, or disabled.

FFUQ79

a. For **whom** does (or did) he work? (Name of company, business, organization, or other employer)

(Write in): ____________________________

b. What **kind of business** or industry is (or was) this? (For example, retail store, manufacturer, state or city government, farming, etc.)

(Write in): ____________________________

c. What kind of **job or occupation** does (or did) he have in this business or industry? (For example, salesman, foreman, policeman, civil engineer, farmer, teacher)

(Write in): ____________________________

d. What are (or were) his most frequent **activities or duties** on this job? (For example, selling cars, keeping accounts, supervising others, operating machinery, finishing concrete, teaching grade school)

(Write in): ____________________________

80. Did your mother (or female guardian) usually work during the following periods of your life?

(Circle one number on each line.)

		Did not work	Worked part-time	Worked full-time	Does not apply
FFUQ8CA	When you were in high school	1	2	3	4
FFUQ80B	When you were in elementary school	1	2	3	4
FFUQ80C	Before you went to elementary school	1	2	3	4

FFUQ81 **81. Did you formally apply for admission (fill out a form and send it in) to any college or other school at any time before October 1973?**

No .... 1 — *(SKIP to q. 85) Next page* ⟶
Yes 2

82a. When you first applied, what was the name and address of the FIRST school or college of your choice?

Name: (omitted)
Address: (omitted)
(city) (state)

FFUQ82B **82b. Were you accepted for admission at this school?**

(Circle one.)

Yes, and attended 1
Yes, but this school did not have enough room 2
Yes, but did not attend for other reasons 3
No, was not accepted 4

FFUQ82C **82c. Did you apply for financial aid at this school?**

(Circle one.)

No .... 1 } — *(SKIP to q. 83a)*
Yes, but was offered no financial aid .... 2 }
Yes, and was offered financial aid 3

82d. What were the approximate values of the financial aid that you were offered for the first academic year? (If none, enter "none")

Scholarship: $ FFUQ82DA Loan: $ FFUQ82DB Promised job: $ FFUQ82DC

83a. At that time, what was the name and address of your SECOND CHOICE school or college?

FFUQ83AA I applied to only one school .... 1 — *(SKIP to q. 85) Next page* ⟶
Name: (omitted)
Address: (omitted)
(city) (state)

FFUQ83B **83b. Were you accepted for admission at this school?**

(Circle one.)

Yes, and attended 1
Yes, but this school did not have enough room 2
Yes, but did not attend for other reasons 3
No, was not accepted 4

FFUQ83C **83c. Did you apply for financial aid at this school?**

(Circle one.)

No .... 1 } —(SKIP to q. 84a)
Yes, but was offered no financial aid .... 2 }
Yes, and was offered financial aid 3

83d. What were the approximate values of the financial aid that you were offered for the first academic year? (If none, enter "none")

Scholarship: $ FFUQ83DA   Loan: $ FFUQ83DB   Promised job: $ FFUQ83DC

84a. At that time, what was the name and address of your THIRD CHOICE school or college?

FFUQ84AA I applied to only two schools .... 1 —(SKIP to q. 85)
Name: (omitted)
Address: (omitted)
(city) (state)

FFUQ84B **84b. Were you accepted for admission at this school?**

(Circle one.)

Yes, and attended 1
Yes, but this school did not have enough room 2
Yes, but did not attend for other reasons 3
No, was not accepted 4

FFUQ84C **84c. Did you apply for financial aid at this school?**

(Circle one.)

No .... 1 } —(SKIP to q. 85)
Yes, but was offered no financial aid .... 2 }
Yes, and was offered financial aid 3

84d. What were the approximate values of the financial aid that you were offered for the first academic year? (If none, enter "none")

Scholarship: $ FFUQ84DA   Loan: $ FFUQ84DB   Promised job: $ FFUQ84DC

85. How helpful were your high school's counseling services in each of the following areas?

(Circle one number on each line.)

				SERVICES CONSULTED AND...		
		Services NOT available	**Services available but NOT consulted**	**Very helpful**	**Helpful**	**NOT helpful**
FFUQ85A	Learning how my interests and abilities fit with different jobs or occupations	1	2	3	4	5
FFUQ85B	Finding out where to train for the job or occupation I wanted	1	2	3	4	5
FFUQ85C	Placing me in a job or helping me to find employment	1	2	3	4	5
FFUQ85D	Finding out the schools or colleges I qualified for which suited my abilities and interests	1	2	3	4	5
FFUQ85E	Finding out about costs at different schools or colleges and how to obtain financial aid	1	2	3	4	5
FFUQ85F	Obtaining financial aid to go to school or college	1	2	3	4	5
FFUQ85G	Recommending fields of work likely to have expanding employment opportunities	1	2	3	4	5

O.M.B. No. 51-72009
APPROVAL EXPIRES 1-31-73

Student's School Record Information

(selected parts)

School Name (omitted)

School Code ☐☐☐☐ Student Number ☐☐ (omitted)

Student's Name ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐
LAST ▲ FIRST ▲ M.I.

(omitted)

NATIONAL LONGITUDINAL STUDY OF THE HIGH SCHOOL CLASS OF 1972

Conducted by
Educational Testing Service, Princeton, New Jersey for the
UNITED STATES OFFICE OF EDUCATION
Spring 1972

OE FORM 2348-3, 2/72

Most of this information should be obtainable from the school's records. However, information not available from the records may be obtained by interviewing the student, using a blank copy of this form as an interview guide.

Student's Address ☐☐☐☐☐☐ ☐☐☐☐☐☐☐☐☐☐☐☐☐☐ (omitted)
NUMBER STREET

☐☐☐☐☐☐☐☐☐☐ ☐☐☐☐☐ ☐☐☐☐☐
CITY STATE ZIP

Social Security Number ____ ___ _____ (omitted)

Rank in Senior Class ______________ (omitted)

Total Number in Senior Class ____________ (omitted)

1. What is this student's overall academic average? (Use whichever grading system is used by your school.)

Grading system	(Circle one.) SRIFGRCD	Student's average	School's grade scale: Lowest possible	School's grade scale: Highest possible
Average letter grade	1	SRFQ1	SRIFLWGR	SRIFHGGR
Percentage grade average	2			
Grade-point (numerical grade) average	3			
Other	4			

2. If the student has taken either of the following college admissions tests, indicate the year the test was taken and the scores received (record only the most recent set of scores for each test).

SRFQ2A	SAT — YEAR TAKEN	19 ☐☐
	SAT scores:	
SRFQ2B	Verbal	☐☐☐
SRFQ2C	Quantitative	☐☐☐
SRFQ2D	ACT — YEAR TAKEN	19 ☐☐
	ACT scores:	
SRFQ2E	English Expression	☐☐
SRFQ2F	Social Studies Reading	☐☐
SRFQ2G	Science Reading	☐☐
SRFQ2H	Mathematics	☐☐
SRFQ2I	Total Score	☐☐

3. Has this student transferred to this school from another school?

		(Circle one.)
SRFQ3	No	1
	Yes	2

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